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MINISTRY OF AGRICULTURE

MONTHLY REPORT

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GOVERNMENT OF NORTHERN IRELAND.
MINISTRY OF AGRICULTURE.

THE DESTRUCTION OF WARBLE FLY MAGGOTS IN CATTLE.

Although the Ox Warble Fly is probably the cause of more loss to the cattle owner than the combined effects of all other parasites of cattle, it is a pest which, until recent years, was allowed to live and multiply practically unmolested by the majority of stock owners. This apparent neglect was due largely to (1) a mistaken idea that little damage was caused to stock by the fly and its maggots, and (2) the absence of an efficient, reliable and inexpensive treatment which was easy to apply and harmless to the animals.

HOW THE PEST LIVES.

Warble flies are somewhat like bumble bees in appearance but, unlike bees, they possess only one pair of wings. The season during which they fly about extends from the latter part of May until the beginning of July, and in that period they pay particular attention to grazing cattle for the purpose of laying eggs on them. When in flight, the flies produce a loud, buzzing sound which is dreaded by cattle, and from which they gad or run.

The eggs are laid chiefly on the legs of the beasts ; sometimes also on the belly and flanks, but apparently never on the back region. The eggs are attached to the hairs and after a short time tiny maggots are hatched from them. These maggots crawl down the hairs and gain access to the body of the animal by burrowing through the skin. By some route not yet clearly known, the maggots find their way internally from the point of entry to the back, where, from February onwards to June they produce swellings which are familiar to all cattle owners.

If unmolested, the fully-grown maggots escape from the back through the openings in the warble swellings ; on the ground the changes from maggot to fly are completed and a new brood of flies is produced which in due course lay eggs to start the life cycle of a subsequent brood.

INJURY CAUSED BY THE PEST.

Both the adult fly and the maggot cause injury to stock. The instinctive fear of the fly which cattle possess induces them to gad incessantly unless a shady glade or a shallow pond,

into which the beasts may congregate, is available. This gadding, together with the continual annoyance caused by the flies when visiting the cattle to lay their eggs is undoubtedly harmful. The beasts are prevented from thriving; they fail to put on flesh at the normal rate and to thrive satisfactorily. In the case of dairy cows, the yield of milk may be seriously diminished, and there is always a grave risk of injury to in-calf cows and heifers by reason of the gadding, or from huddling in shade.

A certain amount of irritation is caused by the maggots when penetrating the skin, while their wanderings inside the bodies of the animals and their presence in the back finally, and the production of the swellings, are certainly detrimental to the general health and well-being of the cattle. In an investigation made in Germany to determine the effect of warble maggots on the progress made by fattening cattle, it was found that one lot of beasts from which the warbles were removed made a gain in weight of 5.16 per cent. more in a given time than those in another lot in which the maggots were allowed to remain.

Beef animals, killed at the time the warbles are in the back or some time afterwards, give carcases which are blemished with suppuration areas caused by the maggots. These areas have to be trimmed off, involving loss of time as well as loss of meat.

Finally, very considerable annual loss is incurred by reason of damage to the hides. This is the damage that can most easily be seen and its extent computed. The most valuable part of the hide is affected by the warble maggots and, accordingly, hide merchants, tanners and leather manufacturers are unable to give top prices for the damaged hides. When it is realised that the value of a hide may be reduced by more than one half, owing to damage from warble maggots, some idea of the loss sustained under this head may be obtained.

The loss, due to warble damage, on the hides handled in one year at three large English centres amounted to over £33,700, while records kept at three hide markets in Northern Ireland showed that in the period from March to October, the average percentage of warbled hides passing through was 53 per cent., or more than one half of the total number. The average loss on each warbled hide is 5/–.

It is seen, therefore, that cattle owners are losing, because of damaged hides, at least 2/6 per head on each beast they sell, since the loss on the hides has ultimately to be borne by the farmer. There is, in addition, the far more serious loss resulting from the other injuries mentioned, and some authorities have estimated that this loss, when added to the loss on the hides, represents, on the average, a total sum per beast sold which is equivalent to the amount of the Subsidy payable under The Cattle Industry (Emergency Provisions) Acts. It is seen, therefore, that the ravages of the warble fly pest are having the

effect of nullifying to a large extent, if not completely, the benefits conferred by these Acts.

PIONEER WORK ON WARBLE FLY DESTRUCTION.

Much valuable work in connection with the destruction of the pest has been done by workers on the problem. For a long time the aim was to prevent egg laying on the cattle by the use of repellents applied to the beasts during the summer months, but this method of attack had to be abandoned as a satisfactory repellent dressing was not found. This line of attack would, moreover, be impracticable as egg laying continues throughout a long period and the repellent dressing, had an efficient one being found, would have to be applied on numerous occasions and on the parts of the beasts which are most difficult to reach.

During late years, workers have directed their attention to the destruction of the maggots in the backs of the cattle, knowing that dead maggots cannot produce live warble flies and that if all the maggots were killed, the pest would cease to exist.

About the year 1922 it was found that powdered Derris root was by far the most deadly agent so far tried in the destruction of warble maggots in the backs of cattle. This powder is produced from the root of a tropical plant but, unfortunately, different lots varied considerably in respect of killing properties and, accordingly, the first step necessary in the development of the treatment was to ensure that a supply of powder of standardised quality became available. In a short time, however, supplies of a standardised grade of Derris were marketed under the name of " Polvo " by Messrs. Cooper, McDougall and Robertson, Berkhamsted, Hertfordshire, and were obtainable either direct from the makers or through local agents.

Following the introduction of Polvo, preliminary tests were carried out from which very satisfactory results were obtained. In these tests it was demonstrated that the Polvo wash was not only remarkably efficient in destroying the warble maggots, but it was inexpensive, as well as being harmless both to the cattle and to those applying it. These preliminary tests were supplemented in subsequent seasons with comprehensive series of tests in Worcestershire and other parts of England, in Scotland, Wales, Northern Ireland and the Irish Free State, as well as in Canada and other countries.

In the earlier years the main demonstrations were on substantially similar lines and the treatment used was a wash composed of :—

1 lb. " Polvo,"
¼ lb. soft soap (spreader),
1 gallon water.

In the meantime the standardised Derris powder became available in forms other than " Polvo," the makers' object being chiefly to prepare a powder in which the spreader was already

incorporated with the Derris instead of leaving it to the farmer to do this, as is necessary in the case of the " Polvo " form of Derris powder.

Two of these new forms of Derris powder, in which the proper proportion of spreader is already incorporated, have been tested officially on infested cattle in Ireland and have proved equally efficient as the Polvo-soft-soap wash. These are Cooper's Warble Fly Powder, which is made by the same firm as makes " Polvo," and " Paragad," which is made by Messrs. Richardson (Dublin) Limited, Talisman Works, 49/50, Barrow Street, Dublin.

RESULTS OF TESTS IN NORTHERN IRELAND.

Tests to determine the value of the Polvo-soap wash have been carried out on an extensive scale since 1930 by the Agricultural Instructors and Overseers in the various counties, while the efficiency of Cooper's Warble Fly Powder has been compared with that of the Polvo-soap wash in the tests conducted since 1932.

In these tests, the washes were applied, as advised later in this leaflet, on four occasions at 28 day intervals from the second or third week of March. Counts were made of the numbers of living warble maggots present at the time of each dressing so as to ascertain the killing effect of each application of the washes. In the following table the results from both washes are tabulated :

	Polvo-soap Wash.	Cooper's Warble Fly Powder Wash.
Total number of tests ..	289	177
Total number of cattle treated	2,528	1,424
Total number of warbles present at time of 1st dressing ..	25,273	13,582
Percentage of total number of warbles killed :—		
(a) by first dressing ..	40.7	28.3
(b) by combined effects of 1st and 2nd dressing ..	75.5	66.4
(c) by combined effects of 1st, 2nd and 3rd dressings	93.5	90.1
(d) by combined effects of all four dressings ...	99.3	99.2

These results show that both washes, when applied on four separate occasions at 28 day intervals from the middle of March onwards, were practically completely successful in destroying all

the warble grubs present in the cattle. It should be noted, however, that four separate dressings were necessary to obtain this almost perfect destruction of the pests.

Paragad wash has been tested officially on infested cattle in the Irish Free State and the results have been equally satisfactory as those obtained with the washes tested in Northern Ireland.

THE NEXT STEP.

These extensive and comprehensive tests having proved conclusively that washes containing standardised Derris are efficient destroyers of warble grubs, while at the same time being inexpensive, easy to apply and harmless to the cattle and to those applying them, the lack of an efficient remedy against the pest can no longer be given as an excuse for neglect to treat infested cattle. Despite this, however, it was apparent that cattle owners generally were not voluntarily taking advantage of the remedy which had been discovered. This being the case, and bearing in mind the enormous losses which the cattle industry is experiencing from the ravages of the pest, the Agricultural Authorities in Great Britain, Northern Ireland and the Irish Free State decided conjointly to make Orders under the Diseases of Animals Acts requiring the compulsory dressing of all cattle infested with warble maggots.

It is believed that the institution of this Order will be welcomed by the great majority of cattle owners in Northern Ireland, for its provisions will ensure that the fullest possible benefit will be obtained from the dressing of cattle as prescribed in the Order. If a voluntary system of dressing remained, the eradication of the pest would be delayed indefinitely, and those who dressed their cattle would not be assured of the full benefit from such work, as the pest would be likely to re-appear from farms where dressing was not done.

Further, as a similar Order has been made in Great Britain it was absolutely necessary for Northern Ireland to make the Order in the interests of the cattle exporting industry, for if this had not been done, the cattle showing warble infestation would not be suitable for shipment and, accordingly, the cattle export trade would be disorganised, if not completely jeopardised, during certain periods of the year.

REQUIREMENTS OF THE ORDER.

These are comparatively simple. All persons having cattle which are infested with the maggots of the warble fly shall take the measures prescribed for the destruction of these pests. These measures are either one or the other of the following—(1) the infested cattle shall be dressed with a wash consisting of a Derris preparation of the prescribed strength at intervals of 28 days, commencing in each year between the 15th and 22nd days of March and continuing at intervals of 28 days until no further maggots are found; (2) the maggots shall be removed by

squeezing them out from the backs of the cattle and all maggots so removed destroyed. The latter process shall commence between the 15th and 22nd days of March in each year, or as soon thereafter as the maggots have reached the stage at which they can be so removed, and repeated at intervals of not more than ten days until all the maggots which are present have been removed. This alternative method is more troublesome and more tedious than that of dressing the cattle with one of the washes prescribed and, consequently, the dressing system is recommended.

STANDARDS PRESCRIBED FOR THE DRESSING.

The dressing shall be prepared immediately before use by diluting with water a preparation in powdered form containing powdered Derris root. The constituents of the preparation and the directions for its dilution shall be such that each gallon of dressing produced shall contain :—

(a) either 1½ ounces of Derris resins or ½ ounce of Rotenone ; and also

(b) 4 ounces of soap, which may be added at the time of dilution or may be incorporated in the preparation in powdered form. Instead of soap a quantity of any other efficient spreader may be used, provided that it is incorporated in the preparation in powder form.

The Order also requires that all packages or receptacles, containing preparations marketed for the purpose of making dressings to destroy warble maggots, shall be clearly and distinctly labelled with a statement giving full directions for dilution and use, and certifying that the dressing, prepared as directed, is in accordance with the specification as given above. It is, therefore, important for purchasers of materials to be used for the preparation of the dressing, to ensure that the material offered is so labelled, as if not, it may not be of the quality prescribed and may, consequently, be inefficient. Moreover, the use of a material not so labelled will not prevent the user from being charged with an offence under the Order. Farmers should, therefore, be very careful not to purchase any preparation which is not clearly labelled to the effect that the contents are in accordance with the specification laid down in the Order.

RECOMMENDED DERRIS POWDERS.

The three Derris powders which were used in the official tests carried out in Northern Ireland and the Irish Free State, namely "Polvo," Cooper's Warble Fly Powder and "Paragad," are recommended as suitable. These can be bought in packages varying in weight from 1lb. to 2 oz., so that as small a quantity as 1 pint of the dressing may be made up without difficulty on the farm.

It should be noted that the dressing must be prepared just before application and that it is an offence to sell or use a dressing which has been mixed for some time previously, either on the

farm or elsewhere. This means that ready-mixed washes may neither be offered for sale nor purchased for use; the material should be obtained only in the powdered form and kept in such form until immediately before application.

PREPARATION OF WASHES.

Polvo-soap Wash.—To make up 1 gallon of wash, ¼ lb. soft soap should be added to 1 quart of water and the water boiled gently until the soap is dissolved completely. 1 lb. of dry "Polvo" powder should then be put into a bucket and the soap solution, after cooling to blood heat has been allowed, poured in slowly and thoroughly mixed up with the "Polvo" by means of a wooden stirrer. Cold water should then be added until 1 gallon of the wash is obtained and this, when well stirred, is ready for application.

Cooper's Warble Fly Powder and Paragad Washes.—These powders, having the spreader already incorporated in them, do not require the addition of soft soap and all the preparation that is necessary is to empty the powders into the quantity of water stipulated, and stir well. Full directions regarding the quantity of water for the package of powder will be found on the package, and in no case should the dilution, as stated on the package, be varied.

It is important, in the case of all three washes, to stir them occasionally during the period of application, to prevent the sediment from settling at the bottom of the vessel.

APPLICATION OF WASHES.

The washes can be most conveniently applied with a soft cloth or brush. The cloth or brush should be kept well saturated and a plentiful supply of the wash applied to each warble swelling. The following points should receive careful attention:—

(1) Every warble swelling, both large and small, on each animal on the farm should be thoroughly wetted with the wash, after first removing any crusty scales with a brush.

(2) The wash should be applied liberally, particularly in the case of rough-coated cattle, but not in such quantity that it streams down their sides.

(3) To avoid the possibility of overlooking warble swellings, those at one side of the backbone should be treated first and then those at the other side.

In the case of dairy cows and of other cattle which are tied in stalls no difficulty will be experienced in connection with the applications of the dressing; but with other classes of cattle it is realised that the most troublesome part of the treatment will be the holding of the beasts while the dressing is being applied. Where a comparatively large number of animals are to be dressed it will be found convenient to erect a pen into which the cattle can be driven for treatment. A simple and satisfactory pen can be made by erecting two rows of strong uprights and nailing

scantlings on the pen side of each row. The pen should not be wider than would accommodate one beast at the exit end, but may be wider at the other end where, if necessary, it could be made in the form of a collecting paddock. Gates fitted at both ends of the narrow portion will confine each beast while the dressing is being applied and each beast as dressed can be released by opening the outer gate. The beasts can be dressed by two persons standing, one on each side of the pen rails. By this system the troublesome task of catching each beast will be obviated.

TIMES OF APPLICATION OF THE DRESSING.

Four separate applications will usually be necessary to destroy all the warble maggots. As already stated, the Order prescribes that these shall be given at 28-day intervals, commencing in each year between the 15th and 22nd days of March. The following programme will comply with this stipulation :—

First dressing—Any time from 15th March to 22nd March ;
Second ,, — ,, ,, ,, 12th April to 19th April.;
Third ,, — ,, ,, ,, 10th May to 17th May ;
Fourth ,, — ,, ,, ,, 7th June to 14th June ;

provided that the period which elapses between any two dressings shall not exceed 28 days. For example, if the 1st dressing is applied on the 15th March, it would be contrary to the provisions of the Order if the second were delayed until after the 12th of April.

There is a definite reason why the Order prescribes definite periods for the application of the dressing. If the first dressing were delayed longer than the 22nd March there would be a distinct risk of some warble maggots reaching maturity and escaping from the backs of the cattle before the first dressing was applied and, accordingly, the success of the treatment would thereby be lessened. Similarly, there is a risk of ripe warble maggots escaping if the periods between the dressings were longer than 28 days. Further, as the development of the warble maggots in the backs of the cattle takes place over a fairly long period, it is evident that a lesser number of dressings than that specified will not ensure complete eradication of the pest and it is for that reason that the Order stipulates the continuance of the dressing at 28-day intervals until the maggots no longer appear. The Order states, however, that dressing need not be continued after the end of June.

MINISTRY OF AGRICULTURE, STORMONT, BELFAST.
February, 1936.

Copies of leaflets may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast. Letters so addressed need not be stamped.

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GOVERNMENT OF NORTHERN IRELAND

MINISTRY OF AGRICULTURE

MONTHLY REPORT

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MINISTRY OF AGRICULTURE
MONTHLY REPORT
MARCH, 1936

The past month has been a trying one for the farmer, with conditions continuing extremely wintry. Outdoor work on the farm was only practicable at intervals, and much more time had to be given to the care of stock than is usually necessary. Arable operations have been pushed forward to some extent, but there is still considerable leeway to make up, and it would appear that unless weather conditions show a marked improvement soon, there will be serious difficulty in overtaking arrears of work and completing sowing and planting in good time. Rarely has the position in respect of arable farming been so badly affected by the weather as during the past winter, and it is to be hoped that weather of normal spring-like nature will arrive soon to bring about a change in the outlook.

While on the subject of spring work, it may be mentioned that farmers will find useful information in Seasonal Notes concerning the Land on page 43, as well as on page 27, where advice is given on barley growing, and on page 45, where suitable seeds mixtures for hay and pastures are recommended. On page 66, also, are given the retail cash prices of agricultural seeds. The manurial mixtures advised for the different crops are printed on page 44, and the prices of fertilisers appear on page 64.

Under the title " Marketing of Pigs," on page 10, are given the results of a year's grading of pig carcases, which contain many interesting features of seasonal trends, etc.

The horse trade in Northern Ireland is at present in a flourishing state, and some idea of the Ministry's efforts to improve this section of the Agricultural Industry may be gauged from reading the article on page 17.

Further information on the subject of the Warble Fly Order, which is now in force, is given on page 29. Stock owners are also advised to read the articles dealing with (I) The Care and Treatment of Breeding Bulls, on page 20, and (II) Calf Rearing with Less Milk, on page 23.

AGRICULTURAL CONDITIONS.

AGRICULTURAL CONDITIONS AT 1ST MARCH, 1936.

The weather during February was, on the whole, drier than in recent months, but otherwise conditions were as wintry as of late. Extremely cold weather was experienced on most days, and sharp ground frosts, which were more frequent at the beginning of the month, held up field work still further, as did intermittent showers of rain, sleet and snow. Stormy conditions also prevailed about the middle of February. Temperatures throughout the month were on the low side, though there were a few mild days when conditions were almost spring-like.

Although some progress was made with field work last month, ploughing is still in arrear. Ploughing of lea land was carried out during the spells of favourable weather, but the work suffered much interruption through heavy showers and frosts, as did other seasonal farm work. It may be stated that approximately one month's arrears of ploughing have still to be overtaken.

Pasture lands are in a very backward state, on account of the frost, and keep is very scarce. Supplies of home-grown food stuffs remain plentiful on most farms, but there has been a heavy drain on hay and turnips this season, and it is feared that if the winter is prolonged a shortage may result on some farms. Concentrated food stuffs continue to be available in plentiful supplies at reasonable prices.

The shortage of grass and the continuance of cold weather are reflected in the condition of outlying cattle, which, generally speaking, is less satisfactory than usual at this time of the year. The hand feeding of cattle with hay, turnips and concentrates continued to be carried out on a larger scale than in recent years, and this has ensured that many herds have been maintained in fairly good condition. Stall-fed cattle are in a satisfactory state, and there have been no reports of abnormal outbreaks of ill-health or disease. Sheep are in a fair condition, and, with the exception of liver fluke disease in a few areas, the health of the flocks is satisfactory, having regard to the weather.

THE CROPS.

WHEAT.—Winter wheat, where brairded, is looking fairly well, but it is thought that in the case of later sowings the germination may be less satisfactory than usual on account of severe frosts. The area sown with wheat so far is considerably smaller than at this time last year, as farmers were unable to get the ground ready, and unless a larger area than usual is sown with wheat of spring varieties the total area under this crop will be smaller than in 1935.

In some districts there is a keen demand for spring wheat, for sowing, which would seem to indicate that farmers intend to take

full advantage of the benefits of the Wheat Act, despite the weather handicaps.

Fair supplies of good quality wheat were sold to authorised merchants during February at unchanged prices of from 5/6 to 6/6 per cwt.

OATS.—The threshing of this crop, which was held up during January, was carried out on a larger scale last month, and good results were obtained. Most of the oats on offer, at markets held during February, were of good quality, but in a few instances offerings of badly screened grain tended to depress the general run of prices.

So far, seed oats have been meeting with a slow trade, a fact which also indicates that the season is late this year.

Smaller supplies of white oats were on offer at markets held during February, and prices were a shade firmer than a month ago, and averaged 5/3 per cwt. The range of prices at markets was from 4/8 to 6/- per cwt. It will be observed from the table of seed prices on page 66 that seed oats are obtainable at from 6/- to 9/6 per cwt.

BARLEY.—The bulk of this crop is being used on the farms for inclusion in pig rations, and in some cases stocks are being held for sowing this spring. In this connection, it is interesting to note that enquiries for seed barley to date suggest that a larger area than usual may be sown with this crop this year.

FLAX.—As will be observed from the statement of the extent and produce of this crop in 1935, printed on page 7, the average yield reached a new high level, and was, in fact, the largest recorded this century. It will be observed, further, that the production of flax has also increased very considerably.

Good progress was made with scutching operations during February, and it is estimated that the bulk of the crop, probably about 80 per cent., has now been scutched. Whilst the yields have given entire satisfaction, opinions as to the quality of the fibre vary to some extent, although in most instances the quality is reported to be good.

Flax was marketed in smaller quantity in February than in the previous month, and prices generally were easier, averaging 8/10 per stone, as compared with 9/- per stone. Prices fluctuated during the month, but at the close were similar to those obtained at the end of January. For the week ended 7th March, the average price was 8/9 per stone and the range was from 7/6 to 9/9 per stone.

POTATOES.—As a general rule, the tubers have kept well in houses and in pits, but there have been several reports received to the effect that, in low-lying fields, pits have become flooded and stocks are

showing signs of rotting; whilst frosting has caused losses among some stocks where the pits were not properly protected. Comparatively speaking, however, these losses are of small account, and the general position is quite satisfactory, having regard to climatic conditions.

Smaller supplies of potatoes were marketed for local consumption during February, and prices were dearer on the month, all classes of the main crop averaging 4/5 per cwt., as against 4/2½ per cwt. for the previous month. It will be noted from the following figures that prices per cwt. at markets last month recovered to 4/7 per cwt. during the first week of February, but since then have moved slowly downwards.

Week ended	Main Crop, All Classes.	Arran Victory.	Kerr's Pink.
	s. d.	s. d.	s. d.
1 February, 1936	4 5	4 5¾	4 6
8 ,, ,,	4 7	4 8	4 9½
15 ,, ,,	4 6¼	4 7	4 5¾
22 ,, ,,	4 4¾	4 5½	4 5¾
29 ,, ,,	4 2½	4 3½	4 3¼
7 March, ,,	4 0½	4 2	4 0½

Supplies shipped to Great Britain during February were smaller than a month ago, but continued on a larger scale than last year. The following are the figures for 1936, contrasted with those for 1935:—

Week ended	Tons.		Tons.
1 February, 1936	6,539	Corresponding week 1935	2,340
8 ,, ,,	5,627	,, ,, ,,	3,047
15 ,, ,,	4,285	,, ,, ,,	2,877
22 ,, ,,	6,820	,, ,, ,,	2,429
29 ,, ,,	6,929	,, ,, ,,	2,980
7 March, ,,	5,848	,, ,, ,,	2,999

The prices per ton paid by shipping merchants to growers during last month showed a general downward tendency, but were still considerably higher than for recent seasons. The following were the prices paid during the week ended 7th March: —

	Bagged.	Loose.
Up-to-Date (Red Soil) ..	£4 0 0 to £4 5 0	£3 10 0 to £3 15 0
Up-to-Date (Grey Soil) ..	£3 15 0 to £4 0 0	£3 15 0
Arran Consul	£3 15 0 to £4 5 0	£3 10 0 to £3 15 0
Arran Victory	£3 10 0 to £4 5 0	£3 10 0 to £4 0 0
Kerr's Pink	£3 12 6 to £4 5 0	£3 10 0 to £4 0 0

MANGELS.—The roots are keeping well, and (where properly protected from the weather) little losses have resulted from frosting. Only a small proportion of the crop has been used as yet. Mangels should prove very useful this year in augmenting the supplies of turnips.

TURNIPS.—The position in regard to this crop is also satisfactory, despite the fact that in some areas the roots have not kept well in drills and that "raan" disease appears to be prevalent. In general, however, supplies on most farms are ample for normal requirements; but there may be a shortage in some areas, where the yield is less satisfactory and where the heavy drain on home-grown food stuffs has caused stocks to fall below the normal level for the time of the year.

HAY.—This crop also has been fed to stock more liberally than usual, and supplies have been greatly reduced. Here again, although no great general shortage is feared, there are smaller supplies available at farms than is generally the case at this time of the year.

Generally speaking, the quality of this year's hay is very good and supplies are in heavy demand. Prices continued to advance and all classes of upland hay averaged 65/- per ton last month as compared with 59/6 per ton in January, 1936, and 56/1 per ton in February, 1935. Meadow hay also was dearer and averaged 50/6 per ton last month as compared with 46/3 per ton in January, 1936, and 44/11 per ton in February, 1935.

GRASS SEED.—Only small lots of Perennial and Italian seeds were marketed during February, and prices cheapened on the month, that of the former by 1/4 to 12/10 per cwt., whilst Italian seed was 5½d cheaper at 11/2 per cwt.

LIVE STOCK.

CATTLE.—With the continuance of cold weather and the lack of keep, stock-owners had to continue hand feeding on a liberal scale. Out-lying stores, which received liberal rations, have been maintained in fair condition, but there are many cases where the cattle are in a

rather thin state. The number of stall-fed cattle is stated to be larger than usual, chiefly as a result of the severe weather conditions, but also on account of the cheapness of feeding stuffs and the attractions of the Beef Subsidy. Dairy cattle generally are in a normal, healthy condition and milking fairly well. The store cattle at fairs held during February were in smaller supply and met with a steady trade, whilst fats, which were in larger number than a month ago, were selling well at firm prices. Dairy cattle were little changed in supply or demand.

SHEEP.—The flocks are, as a general rule, in fair condition. The health is normal, but fluke has made its appearance in some flocks, particularly among breeding ewes; and, as a result of the severe winter, the animals were less resistant than usual to the disease and some deaths have resulted.

Lambing is fairly well advanced; so far the general position this season has been normal, but the crop is reported to be below average and considerably smaller than last year. The proportion of twins is very low.

Small supplies of sheep at fairs held during February were a good trade and recent prices were maintained.

PIGS.—Young pigs continued to be offered in large numbers at fairs during February, and trade was steady at about late rates. The demand for breeding sows of good quality also was good, and prices ranged from £6 to £8 for first litter sows, and from £9 to £11 for second litter animals.

HORSES.—The demand for horses continued keen, and recent satisfactory prices were fully maintained during February. Useful farm horses were selling at from £20 to £40 each, whilst the best types of farm horses and draught horses were making from £45 to £60 each.

MILK.—Supplies available for creameries last month were stated to be normal for the time of the year, and prices ranged from $3\frac{3}{4}$d to $5\frac{1}{2}$d per gallon for milk delivered to the creamery, the separated milk being returned to the farmer.

The average price paid during the month of January for all milk produced in Northern Ireland and delivered to creameries for manufacturing purposes was 5.09d. per gallon, and the Ministry has made equalisation payments at 0.91d. per gallon in order to bring the average price in respect of this month to 6d. per gallon, as provided by the Milk and Milk Products Act (Northern Ireland), 1934.

It should be noted that, under the Regulations, creameries are required to distribute the equalisation payments in accordance with the butter-fat content of the milk received from each supplier. Farmers should, therefore, bear in mind that the actual payments made to them, being calculated on a butter-fat basis, may be at a rate per gallon which may vary below or above this average figure.

THE MARKETS DURING FEBRUARY.

Supplies of the principal vegetables marketed during February were smaller than in the preceding month, and, in the main, prices were dearer. Cabbage and cauliflowers were less plentiful at Belfast Market, and whilst the former were 1d. cheaper at 1/4 per dozen, cauliflowers were unchanged in price at 2/6 per dozen. Savoys were 2¼d. dearer at 1/8¾ per dozen, leeks ½d. dearer at 8½d. per bunch, carrots 1/- dearer at 11/8 per cwt., parsnips 7½d. dearer at 6/1½ per cwt., and garden turnips 2d. cheaper at 1/3 per cwt. At Belfast Market parsley was in keen demand for shipment to Great Britain, and 8d. per bunch dearer than in January at 1/6 per bunch. Farmers' butter was less plentiful than in January and a shade cheaper in price at 1/3 per lb. for print butter and 1/0½ per lb. for lump butter. There were larger supplies of hen and duck eggs marketed in February as compared with the previous month. Hen eggs were 1¼d. cheaper at 8d. per lb., and duck eggs 11¼d. cheaper at 13/3½ per 120. In the poultry markets, hens, chickens, and ducks, were less numerous than a month ago. Hens and chickens were ¾d. dearer at 1/8 and 2/6¼ each, respectively, but ducks were 1¼d. cheaper at 2/- each. Small quantities of wool were marketed at Omagh during the month at unchanged prices of 5d. per lb. for long unwashed wool and 4½d. per lb. for mountain unwashed wool.

THE COST OF LIVING INDEX FIGURE.

The cost of living index figure at 1st February, 1936, was 47, or the same as that for the previous month. At 1st February, 1935, the figure was 42.

EXTENT AND PRODUCE OF THE FLAX CROP IN NORTHERN IRELAND IN 1935.

The average yield of the Flax Crop in Northern Ireland in 1935 is estimated at 39.7 stones (of 14 lb.) per statute acre, as against 37.5 stones in 1934 and 30.7 stones in the decennial period 1925-1934.

The following table shows the estimated extent, total produce and average yield per statute acre of the crop in Northern Ireland in 1935, with comparative figures for the year 1934 and the decennial period 1925-34.

FLAX.

Year.	Extent.	Produce.	Average yield per statute acre.
	Acres.	Tons.	Stones (of 14 lb.).
1935	27,755	6,892	39·7
1934	15,676	3,677	37·5
Average of the ten years' period 1925 to 1934	23,330	4,337	30·7

LIVE STOCK CENSUS AT 1st JANUARY, 1936.

A complete census of the live stock population of the country was taken at the 1st January last. The taking of more frequent censuses of the numbers of live stock is necessitated by the fact that the Ministry requires to be in possession of accurate information regarding the numbers of cattle and pigs at frequent intervals in order to facilitate the working of the various Marketing Schemes at present in operation for the benefit of the farming community.

The results of the census at the 1st January last indicate a continuing upward movement in the numbers of each class of stock. The increase is most marked in the case of pigs, which showed an increase of 6.6 per cent. as compared with the number, at the 1st June last, or 21.7 per cent. over the number, at the 1st December, 1934 ; that is just over a year ago. Appreciable increases of 13.8 per cent. and 9.9 per cent., respectively, occurred in the numbers of boars and sows for breeding at the 1st January last as compared with the numbers six months previously and indicate a further increase in the pig population in the present year.

The number of cattle, 752,028, shows a decrease of 5.9 per cent. as compared with 1st June last, but is greater by 0.2 per cent. than at the 1st December, 1934. It will be understood that the number of cattle at the beginning of the year shows a seasonal decline as compared with the middle of the year, when the number, following the breeding season, is at its maximum. A seasonal increase of 31.9 per cent. occurred in the number of heifers in calf as compared with the number at the 1st June last, but all other classes of cattle are fewer in number than at that date. As compared with a year ago, the numbers of breeding stock remained about the same, but young cattle declined, and an increase was recorded for each of the other classes of cattle. A slight increase in the cattle population at the 1st June next appears probable.

The total number of sheep at the 1st January shows a decline of over 7,000, or 1.4 per cent., as compared with the number just over a year ago. These figures suggest that a further increase will take place in the sheep flocks of the country during the year, as the number of ewes for breeding increased by 3.5 per cent. as compared with the number at 1st December, 1934, and were 12.6 per cent. greater than at the 1st June, 1935.

On the whole, the live stock returns at the 1st January, 1936, may be regarded as favourable, and indicate that further increases in cattle, sheep and pigs may be expected in the coming year. As the crop of lambs is reported to be smaller than usual this will have an effect on the result and may offset the increase anticipated.

Detailed particulars of the results of the census are set out as follows :—

Table showing the numbers of Cattle, Sheep and Pigs in Northern Ireland as at 1st January, 1936, 1st June, 1935, and 1st December,

1934, and the percentage increases in the number at the 1st January, 1936, as compared with the numbers at the 1st December, 1934, and the 1st June, 1935.

	1st Jan., 1936.	1st June, 1935.	1st Dec., 1934.	% Increase January 1936 as compared with June, 1935.	% Increase January 1936 as compared with Dec., 1934.
CATTLE:					
Bulls (for service) ..	4,403	4,763	4,902	— 7.6	—10.2
Milch Cows	250,496	252,297	251,620	— 0.8	— 0.5
Heifers in Calf	36,049	27,339	34,730	+31.9	+ 3.8
Other Cattle:					
Two years old and upwards	78,248	83,592	69,670	— 6.4	+12.3
One year and under two years	178,331	216,490	167,873	—17.6	+ 6.2
Under one year	204,501	214,770	221,425	— 4.8	— 7.6
TOTAL	752,028	799,251	750,220	— 5.9	+ 0.2
SHEEP:					
Rams (for service) ..	16,028	10,325	17,277	+55.2	— 7.2
Ewes (for breeding) ..	413,189	367,030	399,338	+12.6	+ 3.5
Other Sheep:					
One year old and upwards	28,697	42,497	29,002	—32.5	— 1.1
Under one year	63,805	398,452	83,495	—84.0	—23.6
TOTAL	521,719	818,304	529,112	—36.2	— 1.4
PIGS:					
Boars (for service) ..	1,554	1,366	1,304	+13.8	+19.2
Sows (for breeding) ..	52,133	47,436	41,902	+ 9.9	+24.4
Other Pigs.					
Six months old and upwards	32,039	27,824	26,784	+15.1	+19.6
Over three and under six months old	173,057	147,171	131,907	+17.6	+31.2
Under three months old ..	229,374	234,081	199,204	— 2.0	+15.1
TOTAL	488,157	457,878	401,101	+ 6.6	+21.7

A similar census of live stock was taken in Great Britain at the beginning of December, 1935, and the results for England and Wales have been published in the current issue of the Agricultural Market Report. Briefly, it appears that the numbers of cattle at the forthcoming June census will probably show a slight reduction, that the downward movement in the sheep population in the last two years has been arrested, and that some recovery may take place this year and that the numbers of pigs will show a further rise during the current year.

MARKETING OF PIGS.

THE RESULTS OF A YEAR'S GRADING.

Prior to December, 1934, the sale of pig carcases between producers and curers in Northern Ireland was negotiated solely on a weight basis. In order to secure an improvement in the quality of the carcases, the Ministry introduced compulsory grading on the 1st December, 1934, and prescribed definite grades based on the thickness of shoulder fat. Particulars of the grade standards for the different weight classes of roll and ham pig carcases are as follows :—

Weight Class.	(Maximum thickness of back fat at the shoulder).		
	GRADE A	GRADE B	GRADE C
I. c.1.1.14 to c.1.2.14	From $1\frac{1}{4}''$ to $1\frac{7}{8}''$	From $2''$ to $2\frac{1}{8}''$	From $2\frac{1}{4}''$ to $2\frac{1}{2}''$
II. c.1.2.15 to c.1.3.14	$1\frac{3}{8}''$ to $2''$	$2\frac{1}{8}''$ to $2\frac{1}{4}''$	$2\frac{3}{8}''$ to $2\frac{1}{2}''$
III. c.1.3.15 to c.2.0.0	$1\frac{1}{2}''$ to $2\frac{1}{8}''$	$2\frac{1}{4}''$ to $2\frac{1}{2}''$	$2\frac{5}{8}''$ to $2\frac{3}{4}''$
IV. c.2.0.1 to c.2.0.14	$1\frac{5}{8}''$ to $2\frac{1}{8}''$	$2\frac{1}{4}''$ to $2\frac{5}{8}''$	$2\frac{3}{4}''$ to $2\frac{7}{8}''$

Pig carcases in the following categories are classified as "Ungraded" :—

(a) Carcases weighing less than c.1.1.14 or more than c.2.0.14 ;

(b) Carcases within c.1.1.14 and c.2.0.14, but of which the shoulder fat measurements are less than or more than the Grade A, B, or C measurements of the weight class into which they fall ;

(c) Wholly or mainly black pigs, boars, rigs or stags, and sucked sows.

The grading is carried out by the Ministry's veterinary inspectors at the curing factories, and the carcases are valued according to their weight and quality grade.

Since the introduction of compulsory grading, curers have been required to furnish to producers a purchase and grading statement giving complete details of the weight, grade, and value, of every pig carcase purchased. Copies of these statements are sent to the Ministry, and the particulars thereon are utilised for statistical purposes. A mass of valuable information has already accrued, and a review of the

results in the case of about 440,000 carcases dealt with in 1935 will no doubt be appreciated by all those interested in dead pig marketing.

As the highest prices are paid for pigs in Weight Classes I and II, i.e., ranging from c.1.1.14 to c.1.3.14, it would be natural to expect that the bulk of the carcases marketed would fall within these weights. Throughout 1935 the percentage of carcases between these weights was fairly steady at about 80%, being lowest in December at 78.8% and highest in July at 83.3%. The following table gives, by percentages, the numbers of all pigs in each weight class for each month in 1935, and also the numbers under c.1.1.14 and over c.2.0.14 :—

Month	Wt. Class I c1.1.14 to c1.2.14	Wt. Class II c1.2.15 to c1.3.14	Wt. Class III c1.3.15 to c2.0.0	Wt. Class IV c2.0.1 to c2.0.14	Under c1.1.14	Over c2.0.14	Total.
	%	%	%	%	%	%	%
January ..	39.3	41.6	6.7	1.7	9.8	.9	100
February ..	41.2	40.4	5.8	1.4	9.9	1.3	100
March ..	41.4	39.6	5.8	1.4	11.0	.8	100
April ..	42.8	38.3	5.2	1.3	11.4	1.0	100
May ..	44.3	37.7	4.5	1.1	11.5	.9	100
June ..	43.8	37.6	4.2	.9	13.1	.4	100
July ..	43.5	39.8	5.5	1.2	9.5	.5	100
August ..	40.0	42.0	6.8	2.6	7.6	1.0	100
September ..	37.7	43.8	8.2	2.3	7.3	.7	100
October ..	34.5	46.3	8.6	2.2	7.6	.8	100
November ..	33.4	46.3	9.4	2.5	7.2	1.2	100
December ..	35.2	43.6	8.8	2.6	8.7	1.1	100
Average for Year ..	39.4	41.7	6.8	1.8	9.4	.9	100

Taking Weight Class I, it will be noted that the proportion of pigs in this weight range rose from 39.3% in January to a maximum of 44.3% in May, then steadily declined to 33.4% in November, and rose again to 35.2% in December. In Weight Class II, the trend was in exactly the opposite direction, the proportion falling steadily from January to June, then rising until October-November, and falling again in December. The figures in Weight Class III also show

a steady decline from January to June, then rising to a maximum in November, and dropping again in December. As regards Weight Class IV, it will be observed that this class represents a very small proportion of the total, the figure never exceeding 2.6%. The figures, however, indicate that the marketing of heavy carcases is concentrated mainly in the autumn and winter months. The figures for pigs under c.i.i.14 rose steadily from 9.8% in January to a maximum of 13.1% in June, and fell to a minimum of 7.2% in November.

So far as weight of carcase was concerned, the results of the past year indicate that approximately four-fifths of the carcases were marketed within the weights for Weight Classes I and II, and that while the proportion each month for these two classes combined remained more or less constant, the figures in each class moved from month to month in opposite directions. In short, lighter weight pigs were marketed in mid-summer and heavier weights in winter.

The tendency towards marketing at lighter weights in the summer months may also be observed in the following table, which gives the average weight and nett value of all carcases marketed each month, and also the numbers of carcases marketed each month, expressed as a percentage of the total for the year :—

Month.	Average weight of carcase.			Average value of carcase (less levies paid to Pigs Marketing Board.)			Number of carcases marketed (percentage of total for year).
	c.	q.	lb.	£	s.	d.	
January	1	2	15	4	15	5	8.1
February	1	2	16	4	17	2	6.8
March	1	2	13	4	17	7	6.1
April	1	2	12	4	15	0	7.5
May	1	2	13	4	13	0	8.4
June	1	2	9	4	11	6	8.5
July	1	2	13	4	13	3	6.7
August	1	2	14	4	10	7	8.6
September ..	1	2	15	4	8	4	9.7
October	1	2	17	4	9	0	12.2
November ..	1	2	19	4	9	1	9.1
December	1	2	17	4	6	7	8.3
Average for Year ..	1	2	15	4	11	10	100.00

The figures in regard to grading are no less interesting, and the following table shows the percentages of carcases falling into the various grades in each month of 1935 :—

Month.	Grade A	Grade B	Grade C	Under Grade A measurements (U.L.)	Over Grade C measurements (U.F.)	Ungraded	Total.
	%	%	%	%	%	%	%
January ..	33.2	36.2	15.4	.2	2.3	12.7	100
February ..	36.5	34.8	14.1	.1	1.7	12.8	100
March ..	34.5	34.7	14.2	.0	2.9	13.7	100
April ..	33.8	34.5	14.2	.1	3.0	14.4	100
May ..	32.3	34.8	14.8	.1	3.5	14.5	100
June ..	29.9	35.2	15.3	.1	3.5	16.0	100
July ..	31.2	35.5	16.0	.0	4.5	12.8	100
August ..	31.4	35.9	16.9	.1	4.4	11.3	100
September ..	36.2	35.5	14.9	.0	3.6	9.8	100
October ..	38.6	35.4	13.2	.0	2.7	10.1	100
November ..	37.2	36.0	14.2	.0	2.6	10.0	100
December ..	34.2	36.8	15.0	.1	2.8	11.1	100
Average for Year	34.3	35.5	14.8	.1	3.1	12.2	100

It will be seen that the proportion of Grade A carcases rose in February (36.5%), then fell off steadily until June (29.9%), rising to a maximum in October (38.6%), and dropping again in November and December. In the case of Grade B, the maximum variation was only 2.3%, the tendency being downwards until April, and then rising fairly regularly until the end of year. Taking Grades A and B together, the figures show a slight rise to 71.3% in February, then a steady decline to 65.1% in June, followed by an increase each month until October (74%), after which the downward trend set in again. The Grade C figures show a variation of only 3.7%, and their movement is almost identical with that of the Grade B figures. The number of carcases under Grade A measurements each month was practically negligible, but the figures for carcases over Grade C measurements showed a steady rise from February until July and then a fall until November. The " Ungraded " carcases included underweights, overweights, boars, sows, partly or wholly black carcases, and damaged and wholly condemned carcases. The " Ungraded " carcases consisted largely of underweights, and it will be observed that the movement of the figures over the year corresponded closely with that for underweight carcases in the table on page 11.

The analysis of the grading results has been carried a stage further, and the next table shows how the carcases in each of the four Weight Classes graded in each month of 1935 :—

WEIGHT CLASSES I AND II.

Month.	Weight Class I (c.1.1.14 to c.1.2.14).						Weight Class II (c.1.2.15 to c.1.3.14)					
	A	B	C	Under Grade A measurements U.L.	Over Grade C measurements U.F.	Ungraded.	A	B	C	Under Grade A measurements U.L.	Over Grade C measurements U.F.	Ungraded.
	%	%	%	%	%	%	%	%	%	%	%	%
January	45.37	37.76	13.35	.28	1.05	2.19	31.33	41.57	20.95	.17	3.93	2.05
February	48.95	36.28	11.96	.08	.77	1.96	35.13	40.41	19.65	.04	3.05	1.72
March	46.47	37.36	12.14	.09	1.40	2.54	33.47	39.70	20.16	–	4.98	1.69
April	45.79	37.69	12.68	.06	1.61	2.17	32.81	39.84	20.22	.04	5.01	2.08
May	43.36	38.16	14.29	.08	1.84	2.27	30.90	40.82	19.90	.04	6.22	2.12
June	42.02	39.75	13.86	.10	2.07	2.20	27.92	41.07	22.08	.04	5.87	3.02
July	41.94	36.89	14.94	.06	2.56	3.61	28.36	41.24	20.50	.03	7.36	2.51
August	43.11	36.64	14.68	.10	2.30	3.17	28.83	39.75	21.70	.02	6.99	2.71
September ..	48.67	34.76	12.58	.03	1.65	2.31	34.45	39.57	19.01	.01	5.53	1.43
October	51.67	33.26	11.46	.05	1.24	2.32	37.53	40.21	16.67	.02	4.13	1.44
November	50.30	34.35	11.75	.05	1.03	2.52	35.89	40.47	18.50	.01	3.86	1.27
December	45.97	37.72	13.06	.09	1.20	1.96	33.27	41.28	19.71	.04	4.58	1.12
Average for Year..	46.14	36.64	13.07	.09	1.58	2.48	32.88	40.47	19.68	.04	5.05	1.88

WEIGHT CLASSES III AND IV.

Month.	Weight Class III (c.1.3.15 to c.2.0.0)						Weight Class IV (c.2.0.1 to 2.0.14)					
	A	B	C	Under Grade A measurements U.L.	Over Grade C measurements U.F.	Ungraded.	A	B	C	Under Grade A measurements U.L.	Over Grade C measurements U.F.	Ungraded.
	%	%	%	%	%	%	%	%	%	%	%	%
January	28.87	47.87	17.05	.17	2.91	3.13	21.43	53.23	15.82	–	4.08	5.44
February	30.93	48.25	16.92	–	2.46	1.43	23.56	52.20	15.94	–	3.23	5.07
March	29.54	47.94	16.60	–	3.86	2.06	24.40	50.66	15.12	–	6.10	3.72
April	27.94	46.86	15.95	.17	6.17	2.91	20.19	55.29	14.19	.96	2.88	6.49
May	26.66	44.50	18.69	.06	6.95	3.14	20.30	51.63	12.78	–	6.27	9.02
June	23.36	47.36	18.70	–	7.24	3.34	21.75	50.56	14.97	–	5.66	7.06
July	25.31	45.00	19.88	–	6.36	3.45	20.33	49.45	19.23	–	6.32	4.67
August	24.13	44.37	21.79	.04	6.20	3.47	14.23	57.73	18.97	.10	6.49	2.48
September	27.95	46.77	17.12	–	5.46	2.70	19.75	53.78	18.70	–	5.36	2.41
October	33.04	47.60	14.49	–	3.46	1.41	25.02	55.15	13.77	–	4.07	1.99
November	34.14	46.46	14.42	–	3.41	1.57	24.87	55.21	13.04	–	4.55	2.33
December	32.34	47.43	16.18	.03	3.12	.90	24.47	54.22	14.56	.11	4.85	1.79
Average for Year	30.08	45.77	17.20	.03	4.61	2.31	21.76	54.04	15.60	.08	4.95	3.57

It will be observed that in Weight Classes I and II the percentage of Grade A carcases rose in February, then steadily fell until July and June, respectively, rose again until October, and then declined. The maximum variation in each weight class was the same, approximately $9\frac{1}{2}\%$. The percentages of Grade B and Grade C carcases in Weight Class I were highest in June and July, respectively, and lowest in October. The extent of the variation in these two grades was not as large as that for Grade A, the figure for Grade B being 6.49%, and for Grade C only 3.48%. In Weight Class II the proportion of Grade B carcases was fairly steady at about 40.0%, while the percentage of Grade C carcases was greatest in June and lowest in October. In Weight Class III the percentage of Grade A carcases was highest in November and lowest in June. The figures for " U.F." carcases (over Grade C measurements) in each weight class were at their highest in the summer months, and it will be noted that the average percentage in Weight Class I was considerably smaller than in any of the other three weight ranges. It will also be observed that the percentage of Grade A carcases in Weight Class I each month greatly exceeded the corresponding figures in the other weight classes.

Taken as a whole, these grading results indicate that the quality of the pigs was better in February than in January, then steadily fell off until mid-summer, improving again until October, and finishing the year in a downward direction.

HORSE BREEDING IN NORTHERN IRELAND.

1. EXHIBITION OF STALLIONS.

Despite the inclement weather, there was a fair attendance of the public at the Annual Exhibition of Stallions which was held at the Show Grounds of the Royal Ulster Agricultural Society, Balmoral, Belfast, on Friday, 14th February. Here gathered together was a very fine show of Thoroughbred and Clydesdale Stallions from all parts of Northern Ireland to compete for prizes amounting to £100, and also for the valuable premiums offered by the several County Committees of Agriculture, under the Ministry's Horse Breeding Scheme.

There were two classes for Clydesdales—those up to 4 years old and those over that age—and one class for Thoroughbreds. The number of Clydesdales on view was 50 and the number of Thoroughbreds 16. Mr. Robert Park, of Brunstane, Portobello, Midlothian, acted as Judge of the Clydesdales, while Messrs. John Kernohan, M.R.C.V.S., of Ballymena, and George S. Reade, J.P., of Firgrove, Muckamore (in the absence through illness of Mr. J. T. Clanchy, M.R.C.V.S., of Charleville, Co. Cork), acted as Judges in the Thoroughbred class. Messrs. Hugh Dales and James Milling were the Judges for Premiums in the Clydesdale and Thoroughbred classes, respectively.

At the conclusion of the judging, an interesting demonstration was given on the points of a Clydesdale by Mr. Park, who used the champion stallion as his subject. In the course of his remarks, he expressed the view that there was a shortage at the present time of Clydesdales of the best type, a fact that afforded an excellent opportunity for Ulster breeders. The market for such animals was growing, as they were excellent for draught purposes in the towns and cities and for farm work on the smaller types of holding.

In the Thoroughbred class the first prize winner was "Oojah," a son of "Bachelor's Double." This animal had been imported from England in the previous autumn by Mr. Thomas Lindsay, Crossgar. The second place was secured by "Disposition," the property of Mr. John Bamber, Ballymena, and the third place by "Blunderer," owned by Mr. J. F. Hamilton, Katesbridge. In the opinion of the Judges, the stallions exhibited in this class were of fairly uniform quality, and were shown in good condition. The winners were types of sires that should produce good hunters.

The winner of the first prize in the older class of Clydesdales also secured the championship award for the breed—a large silver medal presented by the Clydesdale Horse Society. This stallion, "Meathpark

Balmoral," is owned by Mr. Hugh R. Morrison, Aghadowey, and was placed first at last year's Exhibition and reserved for the championship. The second place in the older class was won by " Lennymore Jack-in-the-Box," the property of Mr. J. A. Duncan, of Crumlin, and the third place by " Ballgray Marcellus," owned by Mr. John Deans, of Limavady.

In the class for younger Clydesdales up to 4 years old, the first prize was awarded to " Carrie's Heir," the property of Mr. A. L. Brown, of Millisle, Co. Down. This stallion was also runner-up for the championship. The second prize was secured by " Cumberland Sensation," owned by Mr. J. K. McElderry, Ballymoney, and the third prize by " Bridgebank General," owned by Mr. Brian McNabb, of Portaferry. These stallions had been imported a short time previously from Great Britain.

All the stallions on view at the Exhibition were considered by the Judges for premiums, Messrs. James Milling and H. Dales, to be up to premium standard.

The following is a complete list of the prize-winners:—

THOROUGHBREDS:

Name of Stallion.	Name of Owner.
1. Oojah	Mr. Thomas Lindsay, Crossgar, Co. Down.
2. Disposition	Mr. John Bamber, Fair Lodge, Ballymena.
3. Blunderer	Mr. F. J. Hamilton, Banbridge.
4. Charmant	Mr. Joseph McClements, Aughnacloy.
5. Deerstalker	Mr. Robt. Donaldson, Milford, Co Armagh.
6. Tradescant	Mr. Robert Lawther, Crossgar.
7. Golden Ball	Mr. Thomas Lindsay, Crossgar.

CLYDESDALES UP TO 4 YEARS:

1. Carrie's Heir	Mr. Andrew L. Brown, Millisle Bay.
2. Cumberland Sensation	Mr. John K. McElderry, Ballymoney.
3. Bridgebank General	Mr. Brian McNabb, Portaferry.
4. Calder Castle	Mr. John C. Drennan, Limavady.
5. Lennymore Keynote	Mr. Jas. A. Duncan, Crumlin, Co. Antrim.
6. Benevenagh	Mr. Thomas Lindsay, Crossgar.
7. Carrick Rock	Mr. J. C. Drennan, Limavady.

CLYDESDALES OVER 4 YEARS:

1. Meath Park Balmoral	Mr. H. R. Morrison, Aghadowey.
2. Lennymore Jack-in-the-Box	Mr. J. A. Duncan, Crumlin.
3. Balgray Marcellus	Mr. John Deans, Limavady.
4. Strathore Duncan	Mr. C. L. Millar, Dervock.
5. Brunstane Hedley	Mr. John H. Crawford, Randalstown.
6. Bridgebank McRoberts	Mr. Thomas H. Gaston, Cloughmills.
7. Culraven Pride	Mr. Chas. Cowan, Goshaden, Londonderry.

2. LICENSING OF STALLIONS.

Under the Horse Breeding Act the number of applications for licences in 1936 was 228, and as a result of the inspections which were carried out in the autumn of 1935 there were 201 licences granted and 24 refused. In three cases inspections have not yet taken place. Licences were refused in 15 cases because of the defective conformation of the animals concerned; in 7 cases because of unsoundness, and in the remaining 2 cases both defects were present. From the following table it will be seen that the total number of licensed stallions has been increasing gradually in the past few years. This is attributable to the popularity of Clydesdale animals, the number of which in four years has risen from 78 to 106.

	Number of Licensed Stallions.			
Year.	Clydesdale.	Thoroughbred.	Other Breeds.	Total.
1933	78	38	65	181
1934	88	35	63	186
1935	94	33	67	194
1936	106	30	65	201

When compared with the figures for the year 1925, the number of licensed stallions of both light and heavy types shows a marked increase. Thus, in 1925 there were 23 Thoroughbreds, 44 Clydesdales and 55 Other Breeds—a total of 122, while in 1936 the numbers, respectively, were 30, 106, and 65—a total of 201, showing an increase of about 65%. It is of interest to note in connection with this increase in numbers that the general standard of the stallions is also reported to be distinctly higher than it was in 1925, and, further, that about half of the Thoroughbred and Clydesdale Licensed Sires are up to premium standard.

THE CARE AND TREATMENT OF BREEDING BULLS.

Proper care and management of bulls used for breeding are essential if satisfactory results are to be obtained. As many farmers have purchased breeding bulls at recent Sales and Shows, the following notes on the care and treatment of these animals may be opportune :—

TREATMENT AFTER PURCHASE.

On arrival at the farm the bull should be given from one to one and a half pints of raw linseed oil and allowed to rest for a few hours in his box. The next feed should be a small bran mash and some good-quality hay. For the first few days the bull should be fed sparingly at the times and, if possible, with the foods to which he was accustomed before sale. If the feeding prior to sale is not known, bran mashes may be continued for a few days. In a short time the effect of the strange surroundings and change will disappear, and the feeding may gradually be altered to suit the desire of the owner and the new conditions.

GENERAL CARE AND MANAGEMENT.

Feeding.—The aim of the bull owner should always be to maintain his animal in good, fit, serviceable condition, as this is essential for successful breeding. This aim can be achieved by the use of suitable foods, a regular system of feeding and ample exercise. Bulls which are too fat and in a flabby condition are usually lazy and frequently unfruitful ; on the other hand, a too-poor condition is equally bad. A suitable daily ration for a yearling stock bull in winter consists of 4 stones roots, 6 lb. cakes and meals and as much good hay as is required. For older bulls, slightly increased quantities may be necessary, although the tendency of older bulls to get excessively heavy should not be overlooked, and the feeding regulated accordingly.

A mixture of cakes and meals that has given very satisfactory results consists of equal parts of crushed oats, palm kernel cake, maize meal and bran. Linseed cake is not held in favour as a food for breeding bulls, and is alleged to be a contributory cause of unfruitfulness.

Roots should, in all cases, be fed to bulls in a pulped or sliced condition. The cake and meal mixture may either be fed separately before the roots or scattered over the latter in the trough. Three feeds daily should be given, and the bull should have an opportunity of drinking at least twice daily.

The feeding in summer will depend on the conditions under which the bull is kept. If a suitable paddock is available, he should be allowed out, and if the grazing is good no additional fodder will be necessary ; if, however, the grazing is poor, cut grass or other green

food should be provided. The daily allowance of cake and meal mixture should be continued throughout the summer.

The trough from which the bull is fed should be kept thoroughly clean and any food remaining should be removed before a fresh feed is given.

HOUSING.—A loose-box is ideal for housing a bull. The box should, if possible, be not less than 12 feet square and be well lighted and adequately ventilated. An open yard adjoining the box, to which the bull has access, is an advantage, but is not essential. The larger the box the more exercise is possible. The floor should be impervious and constructed of concrete left with a rough surface, or of grouted brick or stone. The floor should be kept well bedded and cleaned out daily. It is an advantage to leave part of the floor unbedded, as this helps to keep the bull's feet in good condition. The walls should be whitewashed and the entire box disinfected from time to time. The feeding trough should be placed on the floor and a rack provided for hay. If a box is not available and it is necessary to house the bull in a stall, he should be tied by a neck chain or by a chain fastened to a headstall. A bull should never be tied by the nose ring. The stall in which a bull is tied should be sufficiently large to permit him to lie down comfortably, and it should be cleaned out regularly and kept well bedded.

GROOMING.—During the winter the bull's coat should be groomed daily with the curry comb and brush. Grooming stimulates the circulation of the blood and aids in food digestion and in the maintenance of good health. A periodical washing of the bull's coat with some non-poisonous disinfectant is required as a preventive against lice and other body parasites. Lice may be destroyed by giving two or three washes with a 5 per cent. solution (1 part in 20 parts of water) of Jeyes' Fluid or of a carbolic sheep dip. The derris-soap wash used for the destruction of warbles (see Leaflet No. 64) is also satisfactory for destroying lice. The second washing should be given a week later than the first, and the third a week later than the second : these are necessary to kill the vermin which will have hatched in the meantime, as these washes will not destroy the eggs. Should ringworm appear on a bull, the affected parts should be first scrubbed with a hard brush, using hot water in which washing soda at the rate of 1 lb. to the gallon of water has been dissolved, and an ointment consisting of a mixture of 1 part of carbolic sheep dip, 1 part of sulphur and 10 parts of lard applied daily until a cure is effected.—(See Leaflet No. 70). The treatment for lice or ringworm is not complete unless the house is whitewashed and disinfected. Fresh lime wash to which Jeyes' Fluid or sulphate of copper (bluestone) has been added should be used.

EXERCISE.—A breeding bull, in addition to being suitably and regularly fed, should be given adequate exercise, so that he may always be in a fit and active condition. In winter as well as at other seasons, daily exercise in the open air is essential. A walk of

from one to two miles daily will provide suitable exercise, and if the animal is led along a road these walks will also aid in keeping his feet in good condition. In summer the bull should be allowed out into his paddock or be kept along with the calves in a closed field convenient to the farmyard.

MANAGEMENT DURING THE SERVICE SEASON.

The policy of allowing a bull to run with the cows is not to be recommended. Where this is unavoidable, each cow should be removed, as soon as she is served, to prevent repeated service. One effective service of each cow is sufficient, provided she is in proper season, and bull owners should refuse to allow more than one service for each cow. Repeated service is a waste of energy and is bad for both bull and cow.

A yearling bull should not be allowed to serve more than from 70 to 80 cows throughout the year, but an older bull may with safety be permitted to serve a larger number.

DISINFECTION.—To minimise the risk of being infected with, or acting as a carrying agent for, contagious abortion, the bull should be syringed after each service. This is most important. An ordinary enema syringe, which may be obtained from any chemist, and a mild disinfectant solution such as Lugol's solution (1 tablespoonful to 1 pint of tepid water), lysol (1 dessertspoonful to 1 quart of tepid water), or permanganate of potash (1 part in 1,000 parts of tepid water), should be used for this purpose. The nozzle of the syringe should be inserted into the sheath and the foreskin held with the hand to prevent the immediate escape of the fluid. In addition to this, the hair of the belly and the inner sides of the thighs should be sponged with disinfecting solution of twice the strength used for syringing purposes.

Great care should be taken to douch the animal gently and not to use a disinfecting solution which is too strong or too warm. When commencing to syringe a bull, it is advisable to employ for the first three douches a solution at half the recommended strength only. If these precautions are not adopted, the animal may develop the habit of resisting the douching.

Finally, a bull should always be handled kindly but firmly. Many cases of bulls becoming cross are due to improper handling. A bull should never be abused, as he will remember it and may retaliate when opportunity offers.

CALF REARING WITH LESS MILK.

From numerous calf-rearing experiments previously carried out, it has been demonstrated clearly that :—

(1) Calves can be reared very successfully from the age of six or seven weeks on separated milk and
   (a) a mixture of equal parts crushed oats, maize meal and bran ;
   (b) raw, crushed oats only.

(2) There is no necessity to cook the meal mixture or the oats, or to make gruels, as equally good results were obtained when they were fed in the raw, dry state after the milk as when they were cooked and fed along with the milk.

For the first four weeks of a calf's life, whole milk should be fed, but after that time the whole milk may be replaced gradually with separated milk, until, by the time the calf is about 6 weeks old, the milk ration consists entirely of separated or skim milk. During the transition stage from whole to separated milk and afterwards, the deficiency in fat resulting from the change to separated milk should be made good by giving the calf a little meal mixture composed of equal parts crushed oats, maize meal and bran, or even crushed oats only, in the bucket after the feed of milk has been consumed. There is no necessity to feed expensive meal mixtures, containing a high proportion of protein, if adequate supplies of separated milk or buttermilk are available. In the separation of milk only the butter-fat is removed, and, accordingly, the separated milk contains the same food constituents as whole milk, except as regards the butter-fat, which can be made good by feeding starchy foods such as mentioned above.

Full details regarding the rearing of calves when separated milk is plentiful are given in Leaflet No. 54.

Calf Rearing on Milk-Selling Farms.—Where the whole milk is sold to a creamery, or used for the manufacture of butter on the farm, there will usually be adequate supplies of separated milk available, but where the bulk of the milk is sold in the liquid milk market the scarcity of separated milk is a practical hindrance to the rearing of calves by the usually-accepted method, and the use of whole milk after the six weeks stage would not be an economical proposition. Moreover, with the development of the pig and poultry industries, there has grown up a demand on the farm for separated milk for these classes of stock, and, on some farms at least, the discontinuance of calf-rearing is being seriously considered, or inquiry is being made as to the possibility of rearing calves with a restricted quantity of milk.

In an attempt to find an answer to this question of rearing with less milk, experiments were begun in 1934 by the Agricultural Instructors, in which calves in one group were given a restricted and progressively diminishing quantity of separated milk from the age

of about six or eight weeks onwards. This group was one of three in each experiment, and in the other two groups the calves received normal quantities of separated milk, with different kinds of concentrates in addition.

In the case of the calves reared with a restricted quantity of milk, the meal supplement contained a proportion of fish meal, which was added to the starchy foods to supply the calf with the protein necessary in place of the separated milk withheld.

The calves in all the experiments were reared in the usual way until they were from six to eight weeks old, and were then changed to the respective experimental rations. Those reared on the restricted supply of separated milk had the milk reduced, somewhat as follows :—

Age of Calf.	Quantity of Milk per Calf daily.
8 weeks	6 quarts
9 ,, ...	5 ,,
10 ,, ...	4 ,,
11 ,, ...	3 ,,
12 ,, ...	2 ,,
13 ,, ...	1 quart
14 ,, ...	Nil

In addition to the separated milk, a quantity of a meal mixture consisting of—

3 parts by weight Crushed Oats
3 ,, ,, ,, Maize Meal
3 ,, ,, ,, Bran
½ part ,, ,, White Fish Meal,

was fed dry after each feed of milk. Starting with ¼ lb. of meal mixture per head daily, the quantity was increased gradually until 3 lb. per head daily was reached, at which figure it remained until the completion of the test period, which ranged from 22 weeks to 31 weeks in different experiments.

The feeding given to the calves in the group which, together with the restricted milk group, was included at all the experimental centres, was the normal quantity of separated milk, namely 6 quarts per calf daily, until the animals were from 4 to 5 months old, and a mixture of equal parts crushed oats, maize meal and bran. The meal mixture was given in the raw, dry state after each feed of milk, starting with ¼ lb. per head daily, and the quantity increased gradually until 3 lb. per head daily was reached when the calves were 6 months old. The milk ration was reduced gradually after the animals were from 4 to 5 months old.

The third group of calves at two centres received the normal quantity of separated milk and raw crushed oats only, instead of the meal mixture of crushed oats, maize meal and bran, and the crushed oats were fed raw in similar quantity to that of the meal mixture.

The third group at four centres received the normal quantity of separated milk and a mixture of concentrates composed of—

4 parts by weight Crushed Oats,
2 ,, ,, ,, Maize Meal,
1 part by weight Decorticated Earthnut Cake,

fed in the raw dry state and in like quantity to that given to the other groups of calves which received the normal quantity of separated milk.

In the following tables the average results from these experiments are tabulated :—

TABLE 1.

	Restricted quantity of separated milk plus mixture of oats maize meal, bran and fish meal.	Normal quantity of separated milk plus mixture of oats, maize meal and bran.	Normal quantity of separated milk plus mixture of oats, maize meal and earthnut cake.
Number of Tests	4	4	4
Number of calves fed ..	11	11	11
Average duration of test ..	189 days	189 days	189 days
Average daily gain per head ..	1.03 lb.	1.24 lb.	1.18 lb.
Average cost of milk and concentrates to produce 1 cwt. live weight increase ..	14/5	14/5	14/2
Average of Judges' estimate of value of animals at end of tests	£5 4 9	£5 7 3	£5 5 5

Two of the above four tests were carried out during the winter months and the other four during the summer. As it is of particular interest to note the results from restricted milk feeding during the winter, the average figures for the two winter tests are set out separately in Table 2.

TABLE 2.

	Restricted quantity of separated milk plus mixture of oats maize meal, bran and fish meal.	Normal quantity of separated milk plus oats, maize meal and bran mixture.	Normal quantity of separated milk plus oats, maize meal and earthnut cake mixture.
Number of Tests	2	2	2
Number of calves fed ..	6	6	6
Average duration of tests ..	214 days	214 days	214 days
Average daily gain per head	1.01 lb.	1.20 lb.	1.15 lb.
Average cost of milk and concentrates to produce 1 cwt. live weight increase ..	17/10	17/6	17/–
Average of Judges' estimate of value of animals per head at end of tests	£5 12 6	£5 16 8	£5 18 4

At the two centres where raw crushed oats were fed instead of the mixture of crushed oats, maize meal and earthnut cake, the following average results were obtained:—

TABLE 3.

	Restricted quantity of separated milk plus mixture of oats maize meal, bran, and fish meal.	Normal quantity of separated milk plus oats, maize meal and bran mixture.	Normal quantity of separated milk plus crushed oats only.
Number of Tests	2	2	2
Number of calves fed ..	5	5	5
Average duration of tests ..	171 days	171 days	171 days
Average daily gain per head ..	1.13 lb.	1.11 lb.	1.07 lb.
Average cost of milk and concentrates to produce 1 cwt. live weight increase ..	13/6	16/6	15/6
Average of Judges' estimate of value of animals per head at end of tests	£3 18 6	£4 5 0	£4 5 0

When examining these tables, the figures in respect of the three lots as given in each separate table should be compared. It would not be correct to compare, say, the value of the calves at the end of the test in Table 1 with the values given in Table 2, since the average duration of the tests was not the same in both cases.

When, however, the average results, as given in the individual tables, are compared, it is seen that, generally, the calves fed on the restricted quantity of separated milk and the meal mixture consisting of crushed oats, maize meal, bran and fish meal have thriven satisfactorily, even in the case of the tests carried out during the winter months. It will be observed, however, that the average value, at the end of the tests, of the calves given the restricted milk ration was not, in the case of any of the groups of tests, as high as that of the calves which received the normal quantity of milk. While this is so, it cannot be assumed that restricted milk feeding will always lead to this result, since, in two of the six individual experiments, the average value of the calves fed on the restricted milk ration was significantly higher than the average value of the calves in either of the other two groups at these centres.

As experiments of this nature are still in progress and as the number carried out to date is not sufficient to enable a definite pronouncement as to the efficiency and economy of restricted milk feeding being made, the results here recorded in regard to the restricted use of milk for calf rearing should be looked upon as indications, rather than as proof, of the usefulness of the system. The results, otherwise, are in

agreement with those already obtained, and support the general recommendation that a mixture of crushed oats, maize meal and bran fed dry, or raw crushed oats only, is quite satisfactory for calf rearing when normal amounts of separated milk are fed. It will be noted from the results given that the mixture of concentrates containing earthnut cake (a protein food) did not prove superior to the mixture containing crushed oats, maize meal and bran.

THE GROWING OF BARLEY.

The most suitable soils for barley growing are well drained, medium loams of a nature suitable for growing turnips or potatoes. In Northern Ireland, where there is a moderately high rainfall, light soils in good condition will also produce satisfactory crops of barley. Barley may also be grown on peaty soils, if well drained, but as the crop is liable to lodge on such soils, their use for barley growing is limited. The crop will not be a success if grown on wet, water-logged soils.

The main object when growing the crop for feeding is to get a high yielding variety which will ripen early. A strong-strawed variety is also desirable, as heavy crops of weak-strawed varieties are liable to lodge, and, accordingly, may be difficult to harvest. In experiments, conducted last season by the Agricultural Instructors, three varieties, namely Spratt-Archer, Golden Archer and Old Common (Chevalier), were tested, and each of the varieties gave satisfactory yields. Spratt-Archer and Golden Archer are strong-strawed varieties and suitable for growing on the richer type of soils where there is a danger of lodging occurring. Old Common produces longer and slenderer straw and is more suitable for growing on the lighter classes of soils.

While barley is usually grown after either turnips or potatoes, it may also be grown on lea land, or after another cereal crop following lea. Barley is shallow rooted and grows rapidly, but is unable to compete successfully with weeds; it is better, therefore, to avoid sowing barley after another cereal crop unless the land is very clean. It is a particularly suitable nurse crop for grasses and clovers, and this is another reason why it is an advantage to take a crop of barley after a root crop, since, in the usual rotation practised, the grass and clover seeds are sown with the cereal crop following the manured crop.

The manuring will depend mainly on soil conditions and the place in the rotation. A phosphatic manure is beneficial, as it helps root

development in the early stages and hastens ripening. About 3 cwt. superphosphate per acre is a suitable dressing. Excessive nitrogenous manuring will likely result in a lodged crop and in delayed ripening. For soils of average fertility not more than 1 cwt. per acre of sulphate of ammonia should be applied. Potash is not generally required except on the lightest soils.

When barley is grown after a potato or a turnip crop, which has been well manured, there is little necessity to apply any additional fertilisers.

When grown after another cereal crop, especially if the land is not in high condition, a complete dressing of artificial manures should be applied. This dressing might be 1 cwt. sulphate of ammonia, from 2 to 3 cwt. superphosphate, and 1 cwt. 30 per cent. potash salts, per acre.

The necessary cultivations should be carried out to produce a fine surface tilth. It is important to have the seed bed fine on the surface and firm underneath. Firmness is particularly necessary if the crop is grown on lea ground.

The time for sowing will depend on the condition of the soil, but, generally speaking, the earlier the sowing the better will be the results, provided the soil is in a fit condition to receive the seed. The seed may be sown any time after the beginning of March, and the rate of seeding will depend on whether the seed is to be put in with a corn drill or sown broadcast. If the drill machine is used, from 12 to 14 stones of seed per acre will be sufficient, and if sown broadcast about 16 stones per acre will be necessary.

THE WARBLE FLY ORDER.

By the time these words are in print, the first period during which warbled cattle must be dressed will have arrived. The Order requires the dressing of infested animals to begin *between the 15th and 22nd March*, which means in practice, since both the 15th and the 22nd are Sundays, that by the close of Saturday, the 21st March, all warbled cattle in Northern Ireland must have been dressed once. The second, third and fourth dressings are to be applied at successive intervals of twenty-eight days from the date of the first dressing, and by the end of June, if cattle owners generally will carry out thoroughly the work of dressing their cattle, the population of live warble maggots will be only a fraction of what it was in previous years and the eradication of a troublesome and costly pest will be well begun.

The intensive publicity that the Ministry, with the loyal co-operation of the various Agricultural Organisations, has given to the provisions of the Order, has by now acquainted farmers with their obligations regarding the dressing of their cattle; but it cannot be too often emphasised that the Order does more than merely require the dressing of warbled animals with a Derris preparation; it requires that the dressing shall be of the *right nature*, be applied at the *right time*, and be applied in the *right way*.

THE RIGHT DRESSING.

Farmers are advised to use one of the three recommended preparations, namely "Polvo" (which requires the addition of soft soap), "Cooper's Warble Fly Powder," "Paragad" (which do not). These are the only preparations which have been tried out officially on infested cattle and found to be practically 100 per cent. effective. The need for these official field trials becomes apparent when it is realised that the killing substance in Derris root is, in some forms, unstable in nature, and, unless the Derris powder has been both chemically and biologically standardised, it may not prove efficient, and, accordingly, the dressing of cattle with washes made from such powders will be futile. The mere fact that a warble fly powder contains, or consists of, Derris root is not alone proof that the powder is efficacious for the destruction of warble fly maggots. *Under no circumstances should a ready-made wash be bought;* all recommended preparations are sold in powder form, in as small sizes as 4 and 2 oz. packets, and if these packets are measured out into yet smaller quantities even one animal can be treated without waste. But care should be taken to keep rigidly to the ratio of one gallon of water to 1 lb. of powder in the case of "Paragad" and "Cooper's Warble Fly Powder," and one gallon of water to 1 lb. of powder and 4 oz. soft soap in the case of "Polvo." *Cattle owners having a small number of cattle are advised to use one of the washes which can be prepared*

without the addition of soap, since the mixing of small quantities is easier where the only ingredient to be weighed is the powder itself.

Finally, farmers should remember that the wash, although harmless to warm-blooded animals, is poisonous to fish ; that is why a section of the Order lays down that due precautions should be taken in the disposal of waste dressing to prevent the pollution of any stream, reservoir, well or pond.

THE RIGHT TIME.

The Order implies four dressing periods :—

15th to 22nd March,
12th to 19th April,
10th to 17th May, and
7th to 14th June.

Definite periods have been prescribed for the application of the dressing, because otherwise there would be a risk of ripe warble fly maggots escaping by reason of the treatment being applied too late. The flexible period of a week is allowed so as to give farmers alternative days on which to apply the dressing.

THE RIGHT WAY.

Preparation of Washes :

Polvo-soap Wash.—To make up 1 gallon of wash, $\frac{1}{4}$ lb. soft soap should be added to 1 quart of water and the water boiled gently until the soap is dissolved completely. 1 lb. of dry Polvo powder should then be put into a bucket, and the soap solution, after cooling to blood heat has been allowed, poured in slowly and thoroughly mixed up with the Polvo by means of a wooden stirrer. Cold water should then be added until 1 gallon of the wash is obtained, and this, when well stirred, is ready for application.

Cooper's Warble Fly Powder and Paragad Washes.—These powders, having the spreader already incorporated in them, do not require the addition of soft soap, and all the preparation that is necessary is to empty the powders into the quantity of water stipulated, and stir well. Full directions regarding the quantity of water for the package of powder will be found on the package, and in no case should the dilution, as stated on the package, be varied.

It is important, in the case of all three washes, to stir them occasionally during the period of application, to prevent the sediment from settling at the bottom of the vessel.

Application of Washes :

The washes can be most conveniently applied with a soft cloth or brush. The cloth or brush should be kept well saturated and a

plentiful supply of the wash applied to each warble swelling. The following points should receive careful attention :—

(1) Every warble swelling, both large and small, on each animal on the farm should be thoroughly wetted with the wash after first removing any crusty scales with a brush.

(2) The wash should be applied liberally, particularly in the case of rough-coated cattle, but not in such quantity that it streams down their sides.

(3) To avoid the possibility of overlooking warble swellings, those at one side of the backbone should be treated first and then those at the other side.

MARKETING SCHEMES.

AGRICULTURAL MARKETING (PIG INDUSTRY) ACT (N.I.), 1934.

PIGS MARKETING BOARD (NORTHERN IRELAND).

Election of Members by Registered Producers in the Administrative Counties of Fermanagh, Londonderry and Tyrone.

The second election of members to the Pigs Marketing Board by registered producers in the Administrative Counties of Fermanagh, Londonderry and Tyrone was held in accordance with the provisions of the Pigs Marketing Scheme (Northern Ireland), 1933, in February. Voting papers were despatched on the 14th February to all producers whose names appeared on the Register at the 1st November, 1935, as required by the Scheme, and were received in the Ministry up to and including the evening of 28th February, 1936.

The following table shows the number of voting papers issued, the number received back and the number admitted to the count :—

County.	No. issued.	No. received back.	No. admitted to the count.
Fermanagh	3,388	2,830	2,745
Londonderry	5,535	4,014	3,895
Tyrone	8,549	5,473	5,300
	17,472	12,317	11,940

The total number of papers not admitted to the count was 377, of which 180 had not been signed or witnessed, or on which no votes were marked. The remaining 197 were not completed in accordance with the instructions, e.g., the papers had been altered, votes had been cast for more candidates than there were seats, or the paper had been signed by a person other than to whom it had been addressed. The total of 17,472 papers issued is an increase of 7 per cent. over the number issued at the time of the election in 1934.

The count of votes for the Administrative County of Tyrone (two members) was made on Monday, 2nd March, and the result was declared the same evening as follows :—

Rowley Elliott, Esq., M.P., Craigon House, Coagh ..	2,806 votes
James F. Gamble, Esq., M.P., Bridgehill, Castlederg ..	2,096 ,,
John Joseph McMahon, Esq., Ballygawley	1,929 ,,
James E. Hackett, Esq., Clogher	1,289 ,,
Michael McGurk, Esq., R.D.C., Killeenan, Cookstown ..	1,201 ,,
Michael Early, Esq., Tullyreavy, Rock, Dungannon ..	769 ,,

Messrs. R. Elliott and J. F. Gamble were declared elected.

The count for the administrative County of Londonderry (two members) was made during the forenoon of Tuesday, 3rd March, and the result declared as follows :—

Michael J. Henry, Esq., J.P., Lisnagrot, Kilrea	2,184 votes
Rev. Robert Moore, Macosquin, Coleraine	1,670 ,,
Hugh McCann, Esq., Lemnaroy, Knockloughrim	1,118 ,,
Joseph Starritt, Esq., Desertmartin	817 ,,
Wm. J. McElroy, Esq., Rossdowney House, Londonderry	809 ,,

Mr. M. J. Henry and Rev. R. Moore were declared elected.

The count for the Administrative County of Fermanagh (one member) was made during the afternoon of Tuesday, and the result declared as follows :—

Samuel John Crowe, Esq., Drumwhinney House, Kesh ..	897 votes
John Alexander Cathcart, Esq., Skea Hall, Enniskillen ..	725 ,,
James McElroy, Esq., Duross, Lisnarick, Irvinestown ..	533 ,,
James Edward Clifford, Esq., Drumliff, Lisnaskea ..	405 ,,
John Charles Connor, Esq., Drumberney, Drumcose P.O., Enniskillen	126 ,,
Thomas Bothwell Esq., (Jr.), R.D.C., Moybrone, Letterbreen, Enniskillen	59 ,,

Mr. S. J. Crowe was declared elected.

As a result of the election, the following changes take place in the personnel of the Pigs Marketing Board :—

County Tyrone.

Mr. J. F. Gamble, J.P., replaces Mr. J. J. McMahon.

County Fermanagh.
Mr. S. J. Crowe replaces Mr. J. McElroy.

County Londonderry.
No change took place as a result of the election for this county.

The next election for these three Administrative Counties will be held in February, 1940, and the members elected as shown above will hold office until that date.

The election for the Administrative Counties of Antrim, Armagh and Down will be held in February, 1938, in accordance with the provisions of the Pigs Marketing Scheme (Northern Ireland), 1933.

PIG PRICES FOR MARCH, 1936.

The Pig Industry Council for Northern Ireland have announced the following prices for dead pigs for sale by producers to curers in Northern Ireland in March, 1936:—

Prices Per Dead Cwt.

Weight Class (Dead Weight).	Grade A.	Grade B.	Grade C.	U.L. or U.F.
I. c.1 1q. 14lb. to c.1 2q. 14lb. ..	60/10	57/10	54/10	51/10
II. c.1 2q. 15lb. to c.1 3q. 14lb. ..	60/10	57/10	54/10	51/10
III. c.1 3q. 15lb. to c.2 0q. 0lb. ..	57/10	54/10	51/10	48/10
IV. c.2 0q. 1lb. to c.2 0q. 14lb. ..	51/10	48/10	45/10	42/10

U.L.=Under Grade A measurements. U.F.=Over Grade C measurements.

The price for partly black pigs between c.1.1.14 and c.2.0.14 will be 5/- per cwt. below the relevant grade price.

Authorised cuts:—

(a) Broken ham (dry, shank and/or shell bone break)—5% of the gross value of the carcase.
(b) Broken ham (wet break)—12½% of the gross value of the carcase.
(c) Shoulder-stuck carcase—3/- per shoulder affected.

The gross value of a carcase is the product of the dead weight and the relevant grade or other price per cwt.

Where portion of a pig carcase weighing between c.1.1.14 and c.2.0.14 is condemned and the existence of disease could not reasonably have been known to the producer at the time of slaughter, the appropriate grade price shall apply. If the carcase is wholly condemned on account of disease, the existence of which could not reasonably have been known to the producer at the time of slaughter, the relevant Grade B price shall apply.

The foregoing prices do not apply in the case of (a) wholly black pigs, boars, rigs or stags, sucked sows, and pig carcases weighing under c.1.1.14 or over c.2.0.14, and (b) pigs visibly diagnosable as diseased before slaughter and subsequently condemned; emaciated or screw pigs; smelling pig carcases with definite indications of putrefaction, and pig carcases badly abused or damaged before being handed over by the producer to the curer.

PRICES FOR WILTSHIRE PIGS SOLD ON DIRECT CONTRACT.

In the case of pigs sold alive under direct contract to Wiltshire curers, the prices per dead cwt. payable for graded pigs delivered in respect of the month of March are as follows :—

Weight Class. (Dead Weight).	Grade 1.	Grade 2.	Grade 3.
Under c.1 0q. 14lb.	54/10	54/10	54/10
c.1 0q. 14lb. to c.1 2q. 7lb.	66/10	62/10	58/10
c.1 2q. 8lb. to c.1 2q. 10lb.	63/10	59/10	55/10
c.1 2q. 11lb. to c.1 2q. 14lb.	61/10	57/10	53/10
Over c.1 2q. 14lb.	58/10	54/10	50/10

The standard price, exclusive of bonus, for bacon pigs sold by contract in Great Britain during March is 11/5 per score dead weight, equivalent to 63/11 per cwt.

PRICES FOR LIVE PIGS SOLD TO THE PIGS MARKETING BOARD.

The following prices per live cwt. will be paid for live pigs by the Pigs Marketing Board on and from March 1st, 1936, until further notice :—

Weight Class (Live Weight.)	Grade I	Grade II.	Grade III.	Unsuitable.
Wiltshire Weights. c.1.2.0 to c.1.3.14 ..	51/–	48/6	46/–	39/6
Shipping Weights. c.1.3.15 to c.2.0.0 ..	47/–	44/6		39/6
c.2 0.1 to c.2.1.14 ..	44/6	42/–		39/6
c.2.1.15 to c.2.2.7 ..	42/–	39/6		36/6
c.2.2.8 to c.2.2.21 ..	38/6	36/–		32/6

These prices do not apply to live pigs outside the above weights, live pigs intended for breeding, live boars, live sucked sows, rigs or

stags, injured or diseased pigs, live in-pig gilts, or live pigs sold (on contract registered with the Pig Industry Council) to curers in Northern Ireland. All other live pigs inside these weights can be sold only to the Board.

Authorised Deductions.

Every pig (dead or alive) sold to a curer or to the Pigs Marketing Board is subject to a levy and contribution at present amounting to 3/6.

In addition to this amount, a deduction not exceeding 6d. per pig may be made in the case of sales to curers to cover insurance, so that the producer will not suffer financial loss if the carcase is condemned as unfit for human consumption.

In the case of pigs sold to the Board, there is a deduction of 2/6 per pig for marketing charges.

COST OF STANDARD PIG RATION.

The average retail cash price per cwt. of the standard ration for the sixteen weeks period ended 22nd February, 1936, as calculated by the Ministry, was 6/11¼. This price was used, together with the realised prices of bacon and hams and of fresh meats over a set period, to determine the standard price of pigs for March.

The following is the ration upon which the feeding cost is based :—

Barley Meal	30%
Maize Meal	40%
Pollards (White)	20%
Extracted Soya Bean Meal	5%
Meat and Bone Meal (60% Protein) ..	5%

GRADING STATISTICS.

Table showing the percentages of pig carcases falling within the weight and grade classes indicated during January, 1936.

GRADE A.				GRADE B.				GRADE C.				TOTAL.
1	2	3	4	1	2	3	4	1	2	3	4	
16.1	14.4	2.7	.6	13.7	18.8	4.4	1.3	4.2	8.3	1.3	.3	86.1

UNGRADED CARCASES.

Under Grade A measurements. U.L.	Over Grade C. measurements. U.F.	Wholly condemned. U.	Wholly black injured or damaged. U.	Overweights Underweights boars, sows. X.	Partly black. Y.	
—	2.5	—	1.3	10.0	.1	13.9
					TOTAL	100%

The above figures have been calculated from the purchase and grading statements which the curers furnish to the Ministry. The seasonal decline in the volume of trade noticeable since the end of October was arrested, and the curers' statements showed a marked increase in the number of pigs purchased and graded on a dead weight basis for the roll and ham trade during the month of January. The average price paid for each carcase, less deductions for levy and contribution charges, was £4 10s. 2d., an advance of 3/7 on the December price. The average price per cwt. also recorded an advance of 2/4 on the December price of 52/4, while the average weight of each carcase showed a further reduction of 1 lb. at 1cwt. 2qr. 16lbs.

The following table gives the result of an analysis of the purchase and grading statements furnished by Wiltshire bacon curers in respect of live pigs delivered on direct contract by producers during the month of January, 1936:—

Weight Class.	Grade 1.	Grade 2.	Grade 3.	Unsuitable.	Total.
	%	%	%	%	%
Under c.1 0q. 14lb.	.70	1.17	.52	—	2.39
c.1 0q. 14lb. to c.1 2q. 7lb.	47.02	36.24	9.44	.29	92.99
c.1 2q. 8lb. to c.1 2q. 10lb.	.47	1.17	.58	—	2.22
c.1 2q. 11lb. to c.1 2q. 14lb.	.47	.87	.18	—	1.52
Over c.1 2q. 14lb. ..	—	.41	.47	—	.88
TOTAL	48.66	39.86	11.19	.29	100

The average price per cwt. in respect of these deliveries works out at 61/-, after allowing for levy deductions at 3/6 per pig. The average weight works out at c.1.1.14 per pig, the net average price per pig being £4 3s. 11d.

EXHIBIT AT BRITISH INDUSTRIES FAIR, 1936.

Arrangements were made by the Pig Industry Council for Northern Ireland for the inclusion of an exhibit of Northern Ireland bacon and hams in the general Northern Ireland exhibit staged by the Ministry of Commerce at the British Industries Fair, which was held at Olympia, London, from the 17th to 28th February. The exhibit consisted of branded produce supplied by three Northern Ireland bacon curers, and included Northern Ireland roll bacon, Wiltshire cured sides, hams and lard. The display aroused a great deal of interest and was an

undoubted success. During the exhibition, samples of the bacon were sold freely, and some 4,500 copies of an illustrated leaflet on the Northern Ireland bacon curing industry were distributed, together with lists of provision stores and shops in London and district where Northern Ireland bacon and hams could be obtained.

THE CATTLE INDUSTRY (EMERGENCY PROVISIONS) ACTS, 1934 AND 1935.

Statistics received from the Cattle Committee show that the total amount of payments from the Cattle Fund to Northern Ireland owners up to and including 29th February, 1936, was £372,256 10s. 0d. This amount is approximately 7% of £5,380,401 8s. 9d., the total payment made from the fund to all owners in the United Kingdom in respect of cattle sold on a live weight basis. The total number of animals involved in the payments to Northern Ireland owners was 176,340, and the average price per head was £2 2s. 3d., as against £2 7s. 6d. per head for the 2,264,165 animals for the whole of the United Kingdom.

During the week ended 29th February, payments to Northern Ireland owners were in respect of 2,843 steers, 936 heifers and 74 cow-heifers, of a total weight of 32,116 cwt. and a total realised value of £51,437 3s. 0d. The average price was £13 7s. per head, or 32/- per live cwt. The average weight of each beast was 8cwt. 1qr. 10lb., and the average subsidy obtained for each animal was £2 1s. 8d.

NOTES AND MEMORANDA.

MILK INDUSTRY ASSISTANCE GRANT.

A Bill has been recently before the Imperial Parliament to extend the Milk Industry Assistance Grant for a period of eighteen months. Out of this grant a subsidy has been paid since April 1st, 1934, to creameries in Northern Ireland to raise the price of milk manufactured into butter or cream to 5d. in summer and 6d. in winter. The Milk Act, 1934, under which the grant was authorised, was passed as a temporary measure pending the introduction of long-term legislation for the reorganisation of the Milk Industry. Complementary provisions were made in the Milk and Milk Products Act (Northern Ireland) 1934, for the payment of a sum not exceeding £200,000 into the Milk Fund. The grant was due to lapse on March 31st this year, but as, owing to the trade agreements and to the fact that the Reorganisation Commission for Milk has not yet produced its report, it has not been

possible to introduce as yet permanent measures for raising the price of milk products manufactured in the United Kingdom, it has been decided to continue the grant after April, 1936. As a result of the extension of this measure, the total amount of the grant to be paid into the Milk Fund during the period April 1st, 1936, to September 30th, 1937, will not exceed £100,000. It is hoped that before September, 1936, long-term legislation based upon the expected report of the Reorganisation Commission for Milk will be introduced to raise the price of milk products considerably above the level which they realise at the present time.

THE EUROPEAN POTATO SITUATION.

Some interesting information is provided this month by the Belgian Ministry of Agriculture which indicates that the potato crop for 1935 in the chief importing and exporting countries of Europe has been considerably below the average. The following table gives an index for 1935 of the potato crop in five importing and five exporting countries, with, firstly, 1934 as the basic year (100) and, secondly, the average for 1929-1933. It will be noticed that in both cases there is a considerable drop in the production of potatoes in these countries :—

Chief Importing Countries of Europe.	Index for 1935.	
	1934=100.	Av. 1929/33=100.
Germany	84.7	89.0
Belgium	87.0	74.5
Finland	102.1	118.8
Great Britain	75.4	83.3
Switzerland	78.1	91.5
Chief Exporting Countries of Europe.		
Poland	87.8	96.7
Netherlands	84.3	74.4
Latvia	102.9	124.8
Hungary	64.6	77.2
Estonia	92.3	98.0
Grand Total ..	85.5	——

The Northern Ireland Potato crop in 1935 was also somewhat lower than it was in 1934. The total production in 1935 amounted to 886,679 tons, as compared with 922,908 tons in 1934, and with an average of 1,012,355 tons for the period 1925 to 1934. The general decrease in production throughout Europe has benefited Northern Ireland considerably. There is a strong demand in Great Britain for potatoes, and prices have increased considerably over last year. Below are shown shipments from Northern Ireland for each of the months September, 1935, to February, 1936, as compared with shipments in the same months of the year 1934/35, together with average prices for each month for main crop potatoes :—

SHIPMENTS OF POTATOES TO GREAT BRITAIN
(in tons).

Month.	1934–5.	1935–6.
September	3,502	3,204
October	6,207	14,790
November	10,421	23,564
December	8,371	28,103
January	13,834	27,180
February	10,799	23,660
Total	53,134	120,521

AVERAGE PRICES PER TON OF MAIN CROP VARIETIES AT MARKETS IN NORTHERN IRELAND.

Month.	1934–35.	1935–36.
	s. d.	s. d.
September	61 8	61 3
October	59 2	50 5
November	51 8	47 11
December	47 6	70 0
January	47 11	84 2
February	43 4	88 4

THE POTATO MARKETING BOARD'S WARNING AGAINST OVERPLANTING.

The Board have warned registered producers in Great Britain against the tendency to plant, after a year of comparatively good prices, in excess of national requirements. The somewhat reduced national supply this season is due to a lower average yield rather than to an insufficiency of potato acreage planted. It will, therefore, be seen how grave is the danger of a surplus, with resultant low prices, next season if producers overplant as a reaction to the present price levels.

*AGRICULTURE IN DENMARK, 1933-36.

On 24th April, 1933, a trade agreement was concluded between England and Denmark. Broadly speaking, the object of this agreement was to secure from Denmark a market for English coal and other industrial products and to give Denmark in return a market for her agricultural products in the United Kingdom which would be restricted only in so far as was absolutely necessary in the interests of British agriculture. In practice this resulted in the imposition of certain import duties on a number of agricultural commodities, such as butter, eggs and cream, and in the quantitative regulation of imports from Denmark of bacon, ham and eggs.

This agreement is due to lapse at the end of April of this year, and during the past month discussions have been proceeding with the Board of Trade with regard to its renewal. It is well known that for Northern Ireland the regulation of imports of bacon and hams from Denmark and from other foreign countries has made possible an astonishing expansion in the pig production of the Province. It is interesting at the present time to consider what developments have taken place in Danish agriculture and industry since the Anglo-Danish trade agreement came into force. Danish and other foreign newspapers have contained a good deal of information on this point during recent weeks.

The first outstanding development has been the progress in the industrialisation of the country. Taking 1931 as the base year (100), the Danish index of industrial output for 1932 was 91. In 1933 it was 105, and in 1934, 107. Since 1928 Denmark's industrial output has gone up by 30 points.

Agricultural production, on the other hand, has declined. In 1932 agricultural commodities formed 82 per cent. of the total export trade of Denmark ; in 1933 they formed 81 per cent. ; in 1934, 77.7 per cent., and in 1935, 74.9 per cent. Thus, in four years the proportion of agricultural exports to total exports has fallen by 7 per cent.

The exports which have decreased most are exports of butter and bacon. Exports of butter decreased from 3,386,000 cwts. in 1931 to 2,953,000 cwts., in 1934 ; bacon from 7,677,000 cwts. in 1932 to 4,429,000 cwts. in 1934. The number of pigs in the country in 1933 were 4,407,000. In 1934 the population had dropped to 3,016,000, and fell still further in 1935 to 3,034,000.

The Danish Government naturally foresaw the restriction in the agricultural export trade which would result from the Anglo-Danish trade agreement, and set themselves out to encourage the industrial expansion which has taken place since 1933. It is believed that at the present time this expansion has reached its peak. Any further developments in this direction would make it difficult for Denmark to fulfil its obligations under the trade agreement with Great Britain with regard to the import of English industrial goods. Accordingly, the policy of the Government at the present time seems to be to assist, as far as possible, expansion in the market for agricultural produce. There is evidence of this in the trade agreement which has recently been negotiated between Denmark and Germany, the general effect of which is to increase the exports of Danish agricultural products to Germany, and that of German industrial products to Denmark.

When the provisions of the renewed Anglo-Danish trade agreement are made known, an article will be included in the Monthly Report showing how the arrangements will affect Northern Ireland.

*From Market Supply Committee Notes.

AGRICULTURAL NOTES.

SEASONAL NOTES ON THE LAND.

As seeding time approaches, the preparation of the ground for sowing and planting should be pushed forward at every opportunity. Turnips and pits of potatoes still in the fields should be lifted so that the ground may be ploughed as soon as possible.

Potatoes.—To obtain good crops of potatoes, well-sprouted seed from healthy stocks, and suitable manuring are essential. Experiments have shown that the standard mixture of artificial manures for potatoes, given on page 44 of this report, namely 1 cwt. sulphate of ammonia, 4 cwt. superphosphate and 1 cwt. muriate of potash, along with about 15 tons farmyard manure per statute acre, gives equally as good results as ready-mixed proprietary mixtures which are usually more expensive than the standard mixture made up on the farm. Moreover, the manures comprising the latter can be mixed for a period up to three weeks prior to application without impairing the efficiency of the mixture in any way. The mixing of the manures can be undertaken during days when horse work on the land is not possible and valuable time when the crop is being planted can thus be saved by having the mixture ready beforehand.

Oats.—Where soil conditions are suitable, oats on lea ground may be sown towards the end of March. Early sowing encourages early ripening and thus facilitates harvesting. The application of a dressing of artificial manures, besides increasing the yield, is also of service in promoting early ripening. Suitable mixtures of artificial manures for oats are given on page 44 of this report.

It is also important that a suitable variety for the particular soil conditions on the farm should be chosen, if good crops of oats are to be obtained. Where advice regarding suitable varieties is desired, the Agricultural Instructor for the district should be consulted.

Seed oats should be dressed with a fungicide, such as " Ceresan " or " Agrosan G," prior to sowing to prevent the appearance of seed-borne diseases, such as smut and leaf stripe. Experiments have shown that treatment with these dusts encourages thicker brairds and leads, in many cases, to increased yields. From 5 to 8 ounces of the fungicide should be thoroughly mixed with each cwt. of seed in a disused end-over-end churn or other suitable container. As these dusts are poisonous, the materials themselves and the dressed grain should be handled with care. Sacks in which treated grain is stored should not be used for meals or other foods intended for stock feeding. Precautions should also be taken to prevent the dusts from being inhaled by the persons dressing the seed. If mixing is done in a closed house, a damp handkerchief should be worn over the nose and mouth, if a

proper gas mask is not available. As thicker brairds are usually obtained from treated than from untreated seed sown at similar rates, the customary rate of seeding may be reduced by about one quarter when treated seed is being sown, as otherwise the crop is liable to grow too thickly and to remain short in the straw.

BARLEY.—Farmers, and particularly those engaged in pig keeping, are strongly recommended to grow a small area of barley this year for feeding purposes. The inclusion of barley meal in pig rations aids in the production of good quality bacon and the home production of this foodstuff will reduce the expenditure on purchased feeding stuffs. The results of experiments have shown that good crops of barley can be grown in Northern Ireland from varieties such as Spratt-Archer, Golden Archer and Old Common (Chevalier). Sowing should be carried out early in the season, in March, if possible. Further particulars regarding the growing of barley are given on page 27.

WHEAT.—Where it is intended to sow spring wheat, the importance of early sowing may again be stressed. The choice of varieties of spring wheats is very limited and it is essential that a suitable spring variety be obtained. For sowing during March the varieties known as Red Marvel and Red Fife are suitable, while for later sowing, April Red Bearded is the only variety which can be relied on to produce a properly ripened crop. It is advisable to dress the seed prior to sowing with a fungicide, such as " Ceresan " or " Agrosan G " at a similar rate as recommended for seed oats, to promote a vigorous braird.

Autumn sown wheat will benefit from an application of a nitrogenous manure, such as sulphate of ammonia, nitro-chalk or nitrate of soda. The manure should be applied during the first week of April at a rate of about 1 cwt. per statute acre, and the braird harrowed lightly afterwards.

HAY.—Fields intended for hay should not be grazed after the end of March, otherwise yields may be seriously reduced. Where top dressing of such fields with artificial manures is intended, it should be carried out during March. A suitable mixture of artificials for this purpose is given on page 45. Any loose stones should be collected from fields intended for hay and the land then rolled so that trouble may be saved at mowing time.

PASTURES.—Grassland which has been harrowed and manured during the winter months should be rolled when opportunity offers to level the ground and to consolidate the soil. Heavy land should not be rolled, however, during damp weather as there is a danger of hardening or " poaching " the soil, if this is done.

Where early grass is desired, 1 cwt. of sulphate of ammonia or of nitro-chalk per statute acre should be applied to a small area during the latter end of March or the beginning of April.

If phosphatic manures have not been applied during the winter months to grassland requiring manuring, there is still time to apply a dressing of Semsol or of superphosphate, to obtain results in this year's grazing. An application of from 4 to 6 cwt. per statute acre of either of these manures should be given without delay.

Seeds Mixtures.—Supplies of grass and clover seeds should be ordered early. Samples of seeds it is intended to purchase should be sent to the Ministry's Seed Testing Station for testing, if there is any doubt regarding their quality. The charge made to farmers for the testing of seeds is only 3d. per sample and the testing of samples is a valuable safeguard against purchasing inferior seeds. Envelopes for the dispatch of samples can be obtained free, on application to the Secretary, County Committee of Agriculture, or to the Ministry. Useful information relating to the laying down of land to temporary pasture is given in Leaflet No. 40. An article giving types of seeds mixtures appears on page 45 of this report.

MANURIAL MIXTURES FOR FARM CROPS.

The following notes on suitable manurial mixtures for the different crops may be helpful to farmers at this season :—

Oats.—For oats on lea ground in poor condition, and on land following potatoes, the following mixture of artificial manures per statute acre is recommended for application a few days before, or at time of sowing the seed :—

1 cwt. sulphate of ammonia,
2 cwt. superphosphate,
1 cwt. 30 per cent. potash salts.

For oats following wild white clover lea and on other land in good condition, an application of 2 cwt. superphosphate and from ½ to 1 cwt. 30 per cent. potash salts per statute acre increases the yield and assists in preventing lodging.

Wheat.—An application of 1 cwt. of nitrogenous manure, such as sulphate of ammonia, nitro-chalk or nitrate of soda, per statute acre should be applied during early April and the braird harrowed lightly afterwards.

Flax.—From 1 to 1½ cwt. muriate of potash per statute acre should be applied before sowing the seed. On land in poor condition the addition of ½ cwt. sulphate of ammonia per statute acre is beneficial.

Potatoes.—Where farmyard manure is available, a mixture of 1 cwt. sulphate of ammonia, 4 cwt. superphosphate, 1 cwt. muriate of potash, along with 15 tons farmyard manure per statute acre, is recommended. The artificials can be mixed and stored for from two to three weeks before use without impairing the efficiency of the mixture.

If farmyard manure is not available, the mixture of artificials stated should be applied at the rate of 9 cwt. per statute acre.

TURNIPS.—A dressing of from 10 to 15 tons of farmyard manure along with from 4 to 6 cwt. superphosphate, Semsol, high grade basic slag, or Gafsa rock phosphate per statute acre.

Where farmyard manure is not available, a dressing of from 1 to 1½ cwt. sulphate of ammonia, 6 cwt. superphosphate or other phosphatic manure and from 1 to 2 cwt. 30 per cent. potash salts per statute acre should be applied. If "finger and toe" disease is feared, basic slag should be used in preference to the other sources of phosphates.

MANGELS.—Liberal manuring of mangels is necessary to obtain best results. The following dressing per statute acre is recommended :

20–25 tons farmyard manure,
2 cwt. sulphate of ammonia,
4 cwt. superphosphate,
4 cwt. kainit.

In addition, 1 cwt. nitrate of soda per statute acre, applied as a top dressing after thinning, benefits the crop.

CABBAGE AND KALE.—For these crops the following dressing per statute acre should be given :—

20–25 tons farmyard manure,
2 cwt. sulphate of ammonia,
4 cwt. superphosphate.

HAY.—A suitable top dressing for application during March to land intended for hay for cutting or for seed sowing purposes is :—

1 cwt. sulphate of ammonia
2 cwt. superphosphate
1 cwt. 30 per cent. potash salts
} per statute acre.

PASTURES.—Where the slower acting phosphatic manures, such as high grade basic slag or Gafsa rock phosphate have not been applied during the winter months to grassland, Semsol or superphosphate can be applied at the rate of from 4 to 6 cwt. per statute acre during the spring months. On the lighter classes of soils the application of 1 cwt. 30 per cent. potash salts per statute acre in addition to the phosphatic manure is beneficial.

For the production of early grass, 1 cwt. sulphate of ammonia or nitro-chalk per statute acre should be applied during the first week in April.

SEEDS MIXTURES FOR HAY AND PASTURE.

Very soon, farmers will be considering the purchase of grass and clover seeds for sowing land down to temporary pasture. Unfortunately, in the past, the important matter of seeds mixtures was not given the attention it deserved and the result of this failure to appre-

ciate the absolute necessity to sow a suitable mixture of grasses and clovers, if a good pasture is to be obtained, is seen in the many poor, thin, weedy pastures which are prevalent throughout the country.

It is feared that many farmers regard temporary pasture as being of secondary consideration and are, therefore, concerned chiefly with the prospect of getting good crops of hay and, perhaps, of ryegrass seed. The object of getting good hay crops is not antagonistic to the production of good pastures, provided the principles underlying the obtaining of both are understood and adopted. It is far easier to produce a good crop of hay than to produce a good pasture, but the production of good pasture need not necessarily mean the failure to obtain a good crop of hay or of ryegrass seed.

Temporary pasture is a crop which occupies the ground for three, four, or more years. This being so, it should be the aim and object of every farmer, when laying land down to pasture, to do everything possible to ensure that this crop shall be a good one ; besides, the quality of the pasture at the time the field is again ploughed for a rotation of crops will influence for good or bad the yields of these crops. This, in itself, should be sufficient justification for the little extra expense involved in the purchase of suitable mixtures of seeds. It is well-known, for example, that pastures containing wild white clover not only provide more and better grazing for stock than those which do not, but such fields, when ploughed up again, produce superior yields of crops, and do not normally require so much nitrogenous manure as those in which wild white clover was absent, or poorly represented. It is seen, therefore, that a suitable seeds mixture may, indirectly, save expense in the purchase of manures later.

Probably the most frequent mistake made in the composition of seeds mixtures is the omission of seeds of species of permanent grasses and clovers. The ryegrasses are not permanent—Italian Ryegrass is very short-lived—and while these produce good crops of hay, they cannot be depended on to form good pastures. Of the permanent species of grasses, cocksfoot, timothy, rough-stalked meadow grass and meadow fescue are the most useful, while of the clovers, wild white clover is truly permanent and red and alsike clovers short-lived. The permanent species of grasses do not form seed in the first year as do the ryegrasses and, accordingly, their inclusion in a mixture where it is proposed to save perennial ryegrass seed will not interfere with the purity of the sample of that seed. Where Italian ryegrass seed is saved, it is not usual to leave the land in pasture afterwards, but to plough it up again for another crop.

It is impossible to prescribe a mixture of seeds to suit all soils and conditions, but some general rules may be laid down.

(1) Do not sow ryegrasses in excess.
(2) Include an adequate proportion of permanent grasses, particularly cocksfoot.
(3) Include wild white clover.

(4) Do not sow "complicated" mixtures. Simple mixtures of carefully chosen strains of a few species are much to be preferred.
(5) Do not sow mixtures of unknown constitution.

The following mixtures should be regarded as types only, and will serve as a guide.

FOR ONE YEAR'S HAY AND TWO OR MORE YEARS' GRAZING (SEED NOT SAVED).

Pounds per statute acre.

Species.	Average Soils.	Cold Clay Soils.	Peat Soils.	Light Thin Soils.
Perennial Ryegrass.				
Irish or Scottish ..	12 to 15	18	14	20
Italian Ryegrass.				
Irish	5 to 7	—	5	—
Cocksfoot.				
Danish	8 to 10	6	5	10
Timothy.				
Canadian or Scottish	4 to 5	8	6	—
Rough-Stalked Meadow Grass.				
American	1	2	2	2
Crested Dogstail.				
Irish	—	3	3	3
Red Clover.				
English Broad ..	1	—	—	—
Montgomery, Cornish Marl or English late-flowering	1	—	—	1
Alsike Clover.				
Canadian	1	2	2	1
Wild White Clover.				
Kentish	1	1	1	1
Total (lb. per statute acre)	34 to 42	40	38	38

FOR ONE YEAR'S HAY AND TWO OR MORE YEARS' GRAZING ON MEDIUM SOILS (PERENNIAL RYEGRASS SEED SAVED).

1½ to 1½ bushels 35 to 42 lb. Perennial Ryegrass.
8 ,, Cocksfoot.
3 ,, Timothy.
½ ,, Broad Red Clover.
½ ,, Late-flowering Red Clover.
1 ,, Wild White Clover.

Total 48 to 55 lb. per statute acre.

Red clover should be omitted altogether in districts where it tends to form too large a proportion of the herbage.

SEASONAL NOTES ON LIVE STOCK.

Ox-Warble Fly.—Cattle owners are reminded that to comply with the Ox-Warble Fly Order which has recently been made, the first dressing of a suitable Derris wash must be applied to cattle between the 15th and the 22nd March. Suitable Derris preparations for this purpose are " Polvo," " Cooper's Warble Fly Powder " and " Paragad," supplies of which can be obtained from most chemists and merchants who trade in agricultural commodities. The dressing is inexpensive and simple to apply and, in view of the enormous loss which the pest causes to the cattle industry annually, farmers are strongly urged to comply strictly with the Order. Not only will compliance with the Order benefit the cattle industry as a whole, but the cattle themselves will thrive better and their value will be enhanced to the farmer. Moreover, as a similar Order is in operation in Great Britain it is imperative for cattle owners in Northern Ireland to dress their cattle so as to ensure freedom of shipment to Great Britain.

The application of the wash to cattle which are not tied sometimes presents difficulties as it is troublesome to catch and hold the animals. Where a comparatively large number of such animals are to be treated however, a pen into which they can be driven for treatment should be erected. A simple and satisfactory pen for this purpose can be made by erecting two rows of strong uprights and nailing scantlings on the pen side of each row. The pen should not be wider than will accommodate one beast at the exit end, but may be wider at the other end where, if necessary, it can be made in the form of a collecting paddock. Gates or railings, fitted at both ends of the narrow portion, will confine each beast while the dressing is being applied and each beast as dressed can be released by opening the outer gate. The beasts can be dressed by two persons standing, one on each side of the pen rails. The erection of such a pen will obviate the troublesome task of catching the beasts and holding them while the dressing is being applied.

Further particulars regarding the Order along with information on the preparation and application of the washes recommended are given on page 30 of this report, in Circular No. 13 and in Leaflet No. 64, which has been revised recently. An article on the subject also appears on page 29 of this report.

Bulls.—Bulls kept for service must be fed and managed properly if satisfactory breeding results are to be obtained. Useful information relating to this matter is given on page 20, and in Leaflet No. 61.

Calves.—Attention should now be given to the rearing of calves which will be arriving in increasing numbers from now onwards. While good breeding is the first essential to successful calf rearing, management also plays an important part. Strict attention to cleanliness, housing and management is very necessary if success is to be

obtained. The calf house should be adequately lighted, well ventilated, and provided with an impervious or water-tight floor which allows of easy cleaning. It is a good practice to paint the navel cord of all calves at birth with tincture of iodine as a precaution against white scour and other infection (See Leaflet No. 82—White Scour in Calves).

The feeding of whole milk is essential during the first four weeks of the calf's life ; but after this period, separated milk, along with small quantities of meals given dry after the milk, can be gradually substituted for the whole milk. There is no necessity to use proprietary calf meals when the whole milk is being substituted by separated milk. These meals, while they may give satisfactory results, are often sold at prices far in excess of their feeding value, and their use adds unnecessary expense to the cost of rearing. A small allowance of crushed oats, or a mixture of equal parts crushed oats, bran and maize meal, fed dry after the separated milk is all that is required at this stage. On farms where supplies of separated milk, skim milk or buttermilk for feeding purposes are limited, the problem of finding an efficient milk substitute arises. Experiments to investigate the value for this purpose of a meal mixture containing fish meal have been conducted during the past two years by the Agricultural Instructors and the results obtained from these experiments are given in an article on page 23 of this report.

Sheep.—As lambing is now in progress careful attention to the ewe flock will be necessary and will be well repaid by the better results obtained. The ewes and lambs saved as a result of proper attention at lambing time may well turn a possible loss into a profit on the year's working. The flock should be brought to a field convenient to the farmstead each evening and left there for the night. This practice will not only enable the flock to be inspected each evening and morning with the minimum of trouble, but will also provide exercise for the ewes which is very necessary. Usually little, if any, assistance is required by lambing ewes but it is essential, if losses are to be kept down to the minimum, that the flock be inspected frequently so that assistance may be given when required. Before help is given, the hands of the attendant should be well washed with soap and warm water, to which a little disinfectant has been added, and then lubricated with raw linseed oil.

Should a lamb at any time be found apparently lifeless, it should not be taken for granted that it is dead. It should, on the contrary, be placed in a vessel of warm water, and should there be life in the lamb, the circulation will start all over the body at the same time, and in a little while it may be on its legs again.

Useful information relating to the care and management of sheep is given in Leaflets Nos. 47 and 63.

PIGS.—The feeding and management of boars kept for breeding are important, if satisfactory results are to be obtained. A boar that is underfed and overworked cannot be expected to breed good sized litters irrespective of the attention given to the sow. The feeding should be such that the boar is kept in a fit, hard, thriving condition without becoming overfat. A suitable meal mixture for this purpose is 2 parts by weight bran, 4 parts by weight red pollard, 3 parts by weight maize meal and 1 part by weight high grade meat and bone meal or extracted soya bean meal. If the latter meal is used instead of meat and bone meal it is necessary to add a mineral mixture consisting of 3 parts by weight ground limestone or chalk and 1 part by weight common salt at the rate of 2lb. to each cwt. of meal mixture.

The boar should have access to a run out on fresh, clean pasture so that sufficient exercise may be provided. The feeding of green food, particularly during the winter months, will aid in keeping the boar in good health.

SEASONAL NOTES ON POULTRY KEEPING.

HATCHING.—Hatching of eggs from the heavy breeds should be completed as soon as possible where the aim is to have pullets which will start laying next autumn. Late-hatched chicks are seldom profitable and besides they are often more difficult to rear than those hatched early in the season. Eggs from the light breeds, such as the White Leghorn, however, may be incubated any time up to the beginning of April with the expectation of getting winter layers and hatching of eggs of that breed may be continued, if necessary.

BROODER SPACE FOR CHICKS.—The advice given in last month's notes regarding the prevention of overcrowding in chicken rearing may again be emphasised. A house which provides sufficient accommodation for chicks when hatched will not be large enough when the birds reach the age of from six to eight weeks and unless this point is borne in mind, overcrowding may occur and losses result.

WEANING FROM HEAT.—When the chickens are being weaned from heat a platform of flat perches about one foot high should be placed in the rearing house to prevent huddling in corners and overcrowding during the night. It should be remembered that when chickens are cold they will crowd together in corners of the rearing house and when this occurs many deaths may occur as a result of smothering. To prevent this it is a good plan to place a lamp in the house during cold nights to raise the air temperature of the house.

SEPARATION OF SEXES.—More accommodation for the pullets can be provided by separating the cockerels as soon as the sexes can be distinguished. The cockerels should be placed in a confined run and fed on a soft mash, wet with separated milk or buttermilk, if available,

so as to have them ready for sale as soon as possible. The earlier they reach 3 lb. each in weight, the better the price that is likely to be obtained for them.

Management of Growing Pullets.—The pullets should be placed on free range, and fed on a suitable "growers'" mash, such as is recommended in Leaflet No. 20. Either a slatted floor house or a Sussex ark is excellent for accommodating pullets after they are weaned from heat and put out on range. These types of houses provide efficient ventilation and can be changed readily to fresh ground.

Gapes.—Outbreaks of gapes often cause heavy losses to chicken rearers from this time of year onwards. Where this disease has occurred in past seasons the chickens should be kept off the ground on which the affected birds were run. Clean, fresh ground and rearing indoors for the first six weeks are valuable aids in preventing outbreaks of gapes. Full particulars regarding the prevention and control of gapes are given in Leaflet No. 52.

Coccidiosis.—This is another disease which is responsible for the loss of many chicks on some farms. Strict cleanliness and the rearing of the chickens indoors for the first six weeks are important aids in the prevention of outbreaks. Details regarding the prevention and treatment of coccidiosis are given in Leaflet No. 31.

It should be remembered that chickens kept indoors require special care. It is essential to provide ample space, direct sunlight and efficient ventilation. Green food must be fed regularly and the inclusion in the mash of a good grade of codliver oil is necessary.

Poultry-keepers are reminded that should an abnormal number of deaths occur it is a wise proceeding to take immediate steps to ascertain the cause. Post-mortem examinations and reports can be obtained, free of charge, on chickens sent to the Ministry's Veterinary Research Division, The Farm, Stormont, Belfast. Postage on parcels containing dead chicks should be paid.

Culling of Laying Flocks.—As prices of eggs have fallen, the laying flock should be gone through carefully now and all birds not in production, and those which will not be required for breeding purposes next year, culled out for disposal. The birds which are to be discarded should be penned up and given a daily wet mash for about a fortnight before being sold. Useful hints on culling are given in Leaflet Nos. 2 and 29, while information on the care and management of the birds which are being retained for breeding purposes is given in a new Leaflet No. 83, supplies of which will soon be available.

Turkeys.—Turkey hens should be well fed now to encourage egg production, as advised in last month's Notes. To avoid difficulty in locating nests and to prevent eggs being lost, nests should be provided in hedges or banks, where some natural cover is present,

A couple of large boxes, laid on their sides and having the entrances well hidden by brushwood or whins arranged so that turkeys can occupy them without being seen, will serve the purpose.

If measures, similar to those used in breaking broodiness in ordinary hens, are adopted as soon as each turkey hen shows the first sign of broodiness, nearly twice the number of chicks can be obtained from a given number of hens than would be the case if the hens are allowed to sit when they first go broody. Good feeding during the broody period and afterwards will bring a turkey hen on to lay again in a couple of weeks. The hen should be mated again prior to the start of laying a second clutch of eggs. The eggs of a second clutch are obviously of little advantage if not laid reasonably early in the season, so that if a turkey does not complete the laying of the first clutch of eggs until comparatively late, it is inadvisable to practise this system. Leaflet No. 37 gives full particulars regarding the hatching and rearing of turkeys.

Ducks.—Hatching of ducks for winter egg production should be carried out now. Duck eggs can be hatched satisfactorily in an incubator, but more moisture is required than for hen eggs. The Khaki-Campbell and the Indian Runner breeds are the most suitable for egg production purposes. Eggs from breeds such as the Aylesbury and Pekin, or a cross between these breeds, should also be hatched now, if available, for the production of ducklings for table use. The production of table ducklings is a side line which is well worth consideration.

SEASONAL NOTES ON THE GARDEN AND ORCHARD.

Capsid Bugs.—Apple trees which were attacked by capsid bugs last season should be sprayed, when the buds show less than a quarter of an inch of green growth, with an approved brand of mineral oil spray. Two gallons of the oil as purchased should be thoroughly mixed with an equal quantity of soft water and then another 36 gallons of water added. This makes 40 gallons of wash ready for application. Thorough spraying is essential if satisfactory results are to be obtained; every part of the tree above ground should be thoroughly coated with the spray. These mineral oil sprays are liable to cause scorching if applied when the young leaves have unfolded from the buds. Further particulars of the treatment recommended against capsid bugs are given in Leaflet No. 10.

Apple Scab.—Supplies of lime and bluestone for summer spraying for the control of apple scab should be obtained in good time so that there will be no delay when the time and suitable weather for the application of the spray arrives. Full information regarding the prevention of apple scab, with details of the spraying programme advised, are given in Leaflet No. 33.

MANURING OF APPLE TREES.—A dressing of sulphate of ammonia should be given now to apple trees requiring nitrogenous manure. Trees which did not produce at least 9 inches of new growth during the past season, or on which the bark is of a reddish brown colour, may generally be assumed to require nitrogenous manure. If application is delayed until the trees are about to blossom they are not likely to benefit from the manure this year.

VEGETABLES.—Seeds of celery for main crop supplies should be sown now in a cold frame. The self-blanching varieties are suitable both for canning and cooking purposes. Seeds of cauliflower, broccoli, savoy, borecole, leeks, lettuce, turnips and parsley should be sown out of doors early in April. Main crop carrots should be sown now and a second sowing made of Brussels sprouts and cabbage for late supplies.

Tomato plants raised early in the year should be ready for planting out in cold houses by the end of March or early April.

FLOWERS.—Seeds of hardy annuals, such as Clarkia, Godetia, Shirley Poppy, etc., may be sown out of doors early in April. Early flowering Chrysanthemums should be planted out in suitably prepared ground during the first half of April.

ANNOUNCEMENTS AND REMINDERS.

GENERAL.

All cattle showing warble infestation should be dressed between the 15th and 22nd March with a suitable Derris-root preparation. Supplies of the recommended materials for the preparation of the dressing can be obtained from chemists and agricultural merchants.

Up-to-date information regarding agricultural matters, poultry-keeping, dairying and fruit-growing is given in the Annual Reports published by the County Committees of Agriculture. Copies of these reports can be obtained free from the Secretary, Committee of Agriculture for the County, on request.

The latest information regarding varieties of crops and other matters relating to crop husbandry is also given in Leaflet No. 44 (revised February, 1936), which contains the summarised results of

field trials conducted by the Agricultural Instructors in 1935. Supplies of this leaflet, and of the revised edition of Leaflet No. 7, which gives full particulars regarding the potato experiments carried out in 1935, will be available soon.

Copies of all leaflets are obtainable free from the Ministry, on request.

To ensure using good quality grass and clover seeds in mixtures for laying land down to grass, samples should be sent to the Ministry's Seed Testing Division for testing. Envelopes for the dispatch of such samples can be obtained from the Secretary, Committee of Agriculture for the County, or from the Ministry, free, on request. The cost of having seeds tested is only 3d. per sample.

A revised list of owners of Accredited Poultry Farms has now been issued, and copies can be obtained free from the Ministry or from the Poultry Instructors. All the birds on these farms have passed the test for bacillary white diarrhoea.

Eggs for hatching from birds which also have all passed the test for bacillary white diarrhoea can be obtained from County Poultry Stations. Lists giving the names and addresses of holders of these stations, and also of duck, goose and turkey stations, can be obtained from the Secretary, County Committee of Agriculture, free, on request.

The next session at the Ulster Dairy School, Cookstown, and at the North-West School, Strabane, begins on the 31st March. Further particulars regarding the courses of instruction provided at these Schools, and of the free scholarships to the North-West School, are given in the illustrated prospectuses which also contain application forms, and can be obtained free, on request, from the Ministry. Applications for admission to both Schools should be made immediately.

A new leaflet, No. 83, entitled " The Care, Management and Feeding of the Poultry Breeding Flock," has been prepared and is in course of being printed. It is expected that copies will be available for distribution at an early date. This leaflet gives detailed information on the management of birds intended for breeding and on the care and feeding of the breeding stock.

Leaflet No. 64, on the Destruction of Ox-Warble Maggots in Cattle, has been re-written, and the new edition contains all the information necessary to enable cattle owners to dress their animals with the right desssing, applied at the right times in the right way.

LECTURES CLASSES AND DEMONSTRATIONS.

The following lectures, classes in poultry-keeping and demonstrations on the destruction of ox-warble fly maggots in cattle have been arranged by County Committees of Agriculture :—

LECTURES.

County.	Day and Date.	Centre.	Time.	Subject.
			p.m.	
Antrim ..	Mon., 16th March	Tully, Kells	8. 0	Ox-Warble Fly.
,, ..	Wed., 18th March	Dervock P.E.S.	7.30	Do.
,, ..	Frid. 20th March	Lecture Hall, Kilraughts	8. 0	Do.
Down ..	Mon., 16th March	Courthouse, Saintfield	8. 0	Ox-Warble Fly.
,, ..	Frid., 20th March	Cooke Hall, Killyleagh	7.30	Do.
,, ..	Frid., 20th March	Church Street School, Banbridge	8. 0	Bee-keeping.
,, ..	Tues., 24th March	Parochial Hall, Waringstown	8. 0	Fruit and Vegetable Growing.
Tyrone ..	Frid., 20th March	Altmore P.E.S., Pomeroy	8. 0	Cultivation of Vegetables and Bush Fruits.

CLASSES IN POULTRY-KEEPING.

County.	Day and Date of Commencement of Class.	Centre.	Time at which class is held.
Down ..	Wed., 11th March.	Mr. Baillie's Bungalow, Ardkeen	2 to 4 p.m.
Londonderry	Mon., 16th March	Drumneechy P.E.S., Dungiven	7 p.m.

Each of the above classes will be continued for at least 3 weeks.

DEMONSTRATIONS.

County.	Day and Date.	Centre.	Time at which Demonstration will begin.
Antrim ..	Mon., 16th March	Bushmills Fair	11 a.m.
,, ..	Wed. 18th March	Cloughmills, Market	11 a.m.
,, ..	Thurs., 19th March	Ballymoney Market	11 a.m.
Armagh ..	Mon., 16th March	Camlough Fair	12 noon?
,, ..	Frid., 20th March	Markethill Fair	...
,, ..	Sat., 21st March	Portadown Fair	...
,, ..	Frid., 27th March	Killylea Fair	,,
,, ..	Sat., 28th March	Newtownhamilton Fair	,,
,, ..	Thurs., 9th April	Lurgan Fair	...

FOURTEENTH EGG-LAYING TEST AT STORMONT.

Results to End of Fifth Period.

The fifth period of four weeks ended on the 21st February last. The average total egg production per bird, based on the number of birds originally penned and including those which have died, was :—

(a) for the period under review .. .. 15.1 eggs per bird.
(b) from the start of the test (140 days) .. .. 67.2 ,, ,, ,,

The average number on the same basis, of scoring eggs, namely, supergrade and first grade eggs, laid was :—

(a) for the period under review .. .. 13.8 eggs per bird.
(b) from the start of the test .. .. .. 54.5 ,, ,, ,,

These results show a very satisfactory position regarding egg size. Only eggs which weigh 2 oz. or more are now counted for scoring purposes right from the start, and it is seen from the figures quoted that in the 140 days during which the test has been in progress the average total number of eggs below 2 oz. each in weight laid by each bird was 12.7, or an average of 2.5 eggs per bird per period. That the size of egg has definitely improved since the start of the test is shown by the fact that the average number of eggs below 2 oz. which were laid during the period under review was only 1.3 per bird.

If the average egg production during the period and during the entire time the test has been in progress, respectively, is determined in respect only of the birds which were alive on 21st February, the following figures are obtained :—

	During 5th Period.	During all five periods.
Average total No. of eggs laid ..	15.6	68.7
Average No. of scoring eggs laid ..	14.2	55.9

These figures, when compared with those given above, indicate that the majority of the birds which died had not contributed very much to the average egg production.

Seven birds died during the fifth period and the total number of deaths from the start of the test to the end of that period was 28.

This represents an average mortality rate of 3.07 per cent. The mortality rates in respect of the different sections are as follows :—

1. White Wyandottes 5.0% ; 2. White Leghorns 4.2% ; 3. Rhode Island Reds 1.3% ; 4. Any other Pure Breed 2.4% ; 5 (a). Station-holders White Wyandottes 1.3% ; 5 (b). Station-holders White Leghorns 5.0% ; 5 (c). Station-holders Rhode Island Reds 2.3% ; 6. Clubs' Section 5.0%.

The following are particulars of the leading pens in each Section as at the end of the period under review :—

SECTION 1.—WHITE WYANDOTTES (OPEN). 30 PENS.

Position.	No. of Pen.	Name and Address of Owner.	Number of Eggs Laid.			Test Score Value.
			Super Grade.	First Grade.	Below First Grade.	
1	3	Mrs. H. G. Darley, Trory, Ballinamallard, Co. Fermanagh.	254	280	72	534
2	11	Mr. J. Hall, Lilac Cottage, Donacloney, Co. Down.	409	114	13	523
3	6	Mr. T. Foote, Broughmore, Maze, Lisburn, Co. Antrim.	232	222	75	454

SECTION 2.—WHITE LEGHORNS (OPEN). 8 PENS.

1	37	Mr. J. Waugh, Ballyrickard, Kilwaughter, Co. Antrim.	134	216	83	350
2	34	Mrs. E. Johnston, Craigboy, Donaghadee, Co. Down.	190	148	89	338
3	33	Mr. W. Gunning, Inglenook, Ballywalter, Co. Down.	156	152	128	308

SECTION 3.—RHODE ISLAND REDS (OPEN). 38 PENS.

1	75	Mrs. E. R. Dunwoody, Benmore, Islandmagee, Co. Antrim.	351	163	20	514
2	59	Mrs. J. McNeill, Drain's Bay, Larne, Co. Antrim.	349	133	21	482
3	63	Mrs. D. Patterson, Ballycastle Road, Coleraine, Co. Londonderry.	242	225	15	467
	70	Miss R. L. Sinclair, Ballybirnie, Holyhill, Strabane, Co. Tyrone.	228	239	73	467

SECTION 4.—ANY OTHER PURE BREED (OPEN). 14 PENS.

Position.	No. of Pen.	Name and Address of Owner.	Number of Eggs Laid.			Test Score Value.
			Super Grade.	First Grade.	Below First Grade.	
1	83	Mrs. H. W. Merrick, Agivey House, Aghadowey, Co. Londonderry.	258	155	29	413
2	82	Miss C. C. Meara, Coalisland, Co. Tyrone.	108	263	41	371
3	81	Mrs. T. J. McLaren, Ballykeel, Sixmilecross, Co. Tyrone. (All Light Sussex.)	132	189	93	321

SECTION 5 (a).—WHITE WYANDOTTES (STATION-HOLDERS). 13 PENS.

1	95	Mrs. R. McCullough, Bruslee, Ballyclare, Co. Antrim.	335	194	31	529
2	99	Mrs. M. Rodgers, Ballyginney, Dundrum, Co. Down.	275	211	92	486
3	94	Miss M. McAllister, Backnamullagh, Dromore, Co. Down.	315	112	68	427

SECTION 5 (b).—WHITE LEGHORNS (STATION-HOLDERS). 10 PENS.

1	107	Mr. P. King, Leitrim, Banbridge, Co. Down.	302	101	12	403
2	104	Mrs. W. Crawford, Redergan, Beragh, Co. Tyrone.	216	118	44	334
3	108	Mrs. J. Knox, Shanmullagh, Ederney, Co. Fermanagh.	203	117	36	320
	113	Mrs. J. Brown, Gorsebank, Culcrum, Co. Antrim.	189	131	61	320

SECTION 5 (c).—RHODE ISLAND REDS (STATION-HOLDERS). 22 PENS.

1	120	Mrs. M. D. Bell, Woodview, Moneymore, Co. Londonderry.	316	158	30	474
2	118	Miss M. L. Fleming, Ballymenagh, Dungannon, Co. Tyrone.	322	137	17	459
3	126	Mrs. R. McGiffert, Rathcunningham, Toye, Co. Down.	304	129	37	433

SECTION 6.—POULTRY CLUBS AND YOUNG FARMERS' CLUBS. 17 PENS.

Position.	No. of Pen.	Name and Address of Owner.	Number of Eggs Laid.			Test Score Value.
			Super Grade.	First Grade.	Below First Grade.	
1	149	Banbridge and District Poultry Club. (Rhode Island Reds.)	275	198	41	473
2	136	Ballywalter Young Farmers' Club. (White Wyandottes.)	213	222	50	435
3	141	Ballyclare Poultry Club. (White Leghorns.)	165	233	62	398

The " Test Score Value " means the total of the super grade and first grade eggs. Eggs which weigh less than 2 oz. each are graded as " below first grade " throughout the entire test period.

The pen of White Wyandottes entered by Mrs. Darley, which is leading in Section 1, now occupies the first place in the entire test, displacing from that position the pen of White Wyandottes entered by Mrs. McCullough. The latter pen occupies first place in Section 5 (a) and the second position in the entire test.

Several changes in the leading positions in the different sections have taken place during the period.

LOANS FOR AGRICULTURAL PURPOSES.

The Government of Northern Ireland provides farmers with facilities for procuring loans for various purposes, and the appended schedule is intended to give general information as to the different loan schemes.

Ministry of Finance Loans.

For fuller particulars application should be made to The Secretary, Ministry of Finance, Stormont, Belfast.

Title of Scheme.	Purpose.	Security.	Amount.	Interest.	Repayment.
I. Landed Property Improvement Loans.	a. Erection or improvement of permanent buildings and for permanent land improvements b. To Supplement Drainage Grants made by Ministry of Agriculture.	Prior charge on lands.	£50–£1,000	4½%–4¼%	By annuity payable half-yearly. Normal 22 years. Maximum 35 yrs.
II. Minor Land Improvement Loans.	Similar to above but for work on smaller scale, also for equipment of Poultry Farms.	Bond or Promissory Note (2 sureties)	£20–£100	3%	By annuity half-yearly. Maximum 5 yrs.

Ministry of Agriculture Loans.

For fuller particulars application should be made to The Secretary, Ministry of Agriculture, Stormont, Belfast.

Title of Scheme.	Purpose.	Security.	Amount.	Interest.	Repayment.
I. Machinery and Implement Loans	Purchase of Agricultural Machinery, etc.	Bond or Promissory Note (2 sureties.)	£10–£300 Borrower to lodge 25% of appd. cost	3%	Yearly instalments 3–5 years.
II. Stallion Loans.	Purchase of Stallions approved by Ministry.	do.	Two-thirds of purchase price.	3%	5 annual instalments.
III. Bull Loans.	Purchase of Bulls approved by Ministry.	do.	do.	3%	2 annual instalments.
IV. Fencing Loans.	Erection of Wire Fencing, etc.	do.	£10–£100	3%–4%	Half-yearly by annuity 5–10 yrs.
V. Drainage Unemployment Relief Scheme.	To supplement grants approved.	do.	£20–£100	3%	5 annual instalments.
VI. Live Stock, 1934.	Purchase of Live Stock, including swine and poultry.	Promissory Note (2 sureties).	Total cost of live stock to be purchased	3%	4 annual payments.
VII. Seeds and Fertilisers.	Purchase of seeds and fertilisers.	do.	Total cost of seeds and fertilisers to be purchased	3%	Granted prior to 1st July, repayable in two instalments on 31st December in same year and on 31st December in year following. Granted after 1st July, repayable in full on 31st December in year following.
VIII. Loans for purchase of dairy equipment.	Purchase of Dairy equipment of approved design.	Promisory Note 1 or 2 sureties according to amount of loan.	Total cost of equipment purchased.	3%	Half-yearly by annuity. Maximum 4 years.

PUBLICATION RECEIVED.

The Weekly Weather Report for the period March 4th, 1934, to March 2nd, 1935 (Fifty-seventh Year, Vol. LI—New Series).

This publication contains data relating to temperature, rainfall and sunshine for each week in the twelve months from the beginning of spring, 1934, to the end of the following winter period. The tables are arranged so that the whole sequence of data (with deviations from the average) for a single station occupies one page. The principal tables give data in this form for 57 selected stations, well distributed

over the British Isles. Other tables give the normal values for the twelve climatological districts of the British Isles and the deviation from the normal in each week, in each of the four seasons and in the seasonal year.

The district tables show that during the period under review there was a slight excess of rainfall, on the whole, the only districts recording a deficiency being England, S.W., England, E., and the Midlands, with 97, 96 and 90 per cent. of the average, respectively. Sunshine totals for the year differed little from the average ; the summer was fortunate in having a substantial excess in all districts, while the winter was markedly dull.

Mean temperature was decidedly above the average in all districts, the winter being particularly noteworthy in this respect owing to the phenomenally mild December, while spring was the only season which was, in most instances, slightly colder than usual.

Copies of this report, which has been compiled by the Air Ministry, are obtainable at H.M. Stationery Office, 80 Chichester St., Belfast, or through any Bookseller, price 7s. 6d. net, postage extra.

PRICES OF FEEDING STUFFS.

The following table shows the average retail prices per cwt. of Feeding Stuffs at 1st March, 1936, with comparative figures for the corresponding date in 1935.

	1936.					1935.				
	Price per cwt.	Protein equivalent	Price per unit of protein equivalent	Starch equivalent	Price per unit of starch equivalent	Price per cwt.	Protein equivalent	Price per unit of protein equivalent	Starch equivalent	Price per unit of starch equivalent
STARCHY FOODS:	s. d.		s. d.		s. d.	s. d.		s. d.		s. d.
Maize (whole)	4 10¼	6.8	14 3	81.5	1 2	5 9	6.8	16 11	81.5	1 5
Maize Meal	5 1½	6.8	15 1	81.5	1 3	6 0	6.8	17 8	81.5	1 6
Bran, Red	7 0½	10.0	14 1	45.3	3 1	6 11	10.0	13 10	45.3	3 1
Bran, White	8 6	10.0	17 0	45.3	3 9	8 1	10.0	16 2	45.3	3 7
Pollard, Brown	7 5	11.0	13 6	71.2	2 1	7 3	11.0	13 2	71.2	2 0
Pollard, White	8 3	11.0	15 0	71.2	2 4	8 2	11.0	14 10	71.2	2 4
Barley Meal	6 9½	6.2	21 11	69.7	1 11	8 2	6.2	26 4	69.7	2 4
Oats	6 7	7.6	17 4	60.0	2 2	5 6	7.6	14 6	60.0	1 10
Tapioca Root Flour	—	1.0	—	83.5	—	—	1.0	—	83.5	—
PROTEIN FOODS:										
Linseed Cake, home-made	10 1½	25.0	8 1	71.8	2 10	10 9	25.0	8 7	71.8	3 0
Linseed Cake, foreign	9 2	25.0	7 4	71.8	2 7	9 11	25.0	7 11	71.8	2 9
Linseed Cake Meal	9 3½	25.0	7 5	72.8	2 7	10 2	25.0	8 2	72.8	2 10
Cotton Cake, decorticated	8 9½	35.0	5 0	71.2	2 6	9 1	35.0	5 2	71.2	2 7
Cotton Cake, undecorticated	—	17.0	—	39.2	—	7 0	17.0	8 3	39.2	3 7
Earth Nut Cake, decorticated	8 8¼	41.0	4 3	73.0	2 5	8 9	41.0	4 3	73.0	2 5
Earth Nut Cake, undecorticated	—	27.0	—	57.0	—	9 0	27.0	6 8	57.0	3 2
Soya Bean Meal (extracted)	8 11	38.0	4 8	64.0	2 9	8 10	38.0	4 8	64.0	2 9
Bean Meal	8 0	20.0	8 0	66.0	2 5	8 2	20.0	8 2	66.0	2 6
Fish Meal (60% protein)	15 6	53.0	5 10	58.9	5 3	16 0	53.0	6 0	58.9	5 5
Meat and Bone Meal (40% protein)	9 5	36.2	5 2	44.0	4 3	9 10	36.2	5 5	44.0	3 8
Meat and Bone Meal (60% protein)	13 9½	54.9	5 0	61.3	4 6	14 9	54.9	5 4	61.3	4 10
OTHER FEEDING STUFFS:										
Linseed, whole	16 11	19.0	17 10	119.2	2 10	15 9	19.0	16 7	119.2	2 8
Brewers' Grains (dried)	6 6	13.0	10 0	50.3	2 7	6 6	13.0	10 0	50.3	2 7
Palm Nut Cake	7 10½	17.0	9 3	70.2	2 3	8 0	17.0	9 5	70.2	2 3
Palm Nut Meal	7 10	17.0	9 3	78.0	2 0	8 1	17.0	9 6	78.0	2 1
Potatoes	4 2½	0.6	140 3	18.0	4 8	2 1½	0.6	70 10	18.0	2 4
Oat Straw	2 4¾	0.9	53 3	20.0	2 5	1 11	0.9	42 6	20.0	1 10
Meadow Hay	2 6½	4.6	11 1	37.0	1 4	2 2	4.6	9 4	37.0	1 2
Turnips (Swede)	0 9	0.7	21 5	7.0	2 2	0 9	0.7	21 5	7.0	2 2

One of the objects of the foregoing table is to guide farmers in the economic purchase of feeding stuffs.

Ignoring their mineral content, the valuable constituents of any feeding stuff, whether home-grown or purchased, consist of :—

(1) Carbohydrates—a group of substances which include materials such as starch, sugar, etc. They supply heat or energy to the animal, and the surplus is stored by the animal as fat.

(2) Oil—which also provides heat or energy, the surplus being stored as fat. For this purpose oil is approximately $2\frac{1}{2}$ times as valuable as the carbohydrates, but its presence in the ration in excessive quantities may lower the digestibility of the ration and cause digestive troubles.

(3) Protein—The group of bodies termed protein or albuminoids contain nitrogen. Protein is the only ingredient of a feeding stuff which can produce flesh or muscle, and hence its special importance.

All animals require a certain amount of each of the above constituents, but the relative amounts depend upon the class of stock. Thus, for example, a two-year-old fattening bullock requires a relatively small amount of protein (flesh forming material). Its ration should consist mainly of foods rich in carbohydrates, i.e., fat producing substances. On the other hand, a dairy cow is producing milk, which is a substance rich in protein, and as the protein, that is flesh forming material in milk, can only be derived from the protein in the food, the ration for the dairy cow must contain considerably more protein than that for the fattening bullock.

There are very wide differences in the composition of feeding stuffs, both home grown and purchased. Some, such as oats and maize, are rich in carbohydrates, and, therefore, particularly valuable for fattening purposes, whilst others, such as decorticated cotton cake, earthnut cake and linseed cake, are rich in protein, and are chiefly valuable for their flesh and milk-producing properties.

In the following table the composition of some of the more commonly used feeding stuffs is shown :—

PERCENTAGE COMPOSITION.

	Water.	Protein.	Oil.	Carbohydrates.
Turnips (Swede)	88	1	0.2	9
Potatoes	75	2	0.1	21
Oat Straw	14	4	2	37
Meadow Hay	10	10	3	45
Pasture Grass	80	3.5	0.8	10
Cabbage	89	1.5	0.5	8
Fattening Foods :				
Oats	13	9	6	60
Maize Meal	12	10	4	70
Barley Meal	13	12	2	66
Flesh Forming Foods :				
Linseed Cake	11	30	10	35
Decorticated Cotton Cake	9	40	9	26

The farmer frequently asks what is the cheapest feeding stuff to buy. It is, however, often very difficult to give a direct answer. Much depends upon what the feeding stuff is required for, whether for fattening or milk production. Again, maize and oats are essentially fattening foods, whilst decorticated cotton cake is a flesh-forming food, and it would be just as futile to use the cost per ton to compare their values as it would be to use the cost per ton to compare the values of, say, sulphate of ammonia and superphosphate.

Foods of similar composition can, however, be compared, and it is possible for the enterprising farmer to effect considerable economies, not only in the use of home-grown feeding stuffs, but particularly in the purchase of concentrated feeding stuffs, by studying the market prices.

The starch equivalent figure is a measure of the energy, heat or fat producing value of the feeding stuff, and shows the number of pounds of starch which would be required to give the same heat or energy as 100 lb. of the feeding stuff. For example, the table on page 62 states that the starch equivalent of maize meal is 81½, or, in other words, 100 lb. of maize meal will provide as much heat or energy as 81½ lb. of pure starch.

The protein equivalent figure shows the number of pounds of digestible flesh or muscle producing material in 100 lb. of each of the feeding stuffs listed.

PRICES OF FERTILISERS.

The following table shows the ranges of retail cash prices of fertilisers per ton at 1st March, 1936.

			Cost of unit of fertilising ingredient at average of range of prices shown.		
Nitrogenous Manures.			Nitrogen	Phos. Acid	Potash
Sulphate of Ammonia (20.6%N)	£7 0 0 to £7 15 0		7/2		
Nitro Chalk (15.5%N)	£7 10 0 to £9 0 0		10/7¾		
Nitrate of Soda (15%N)	£7 10 0 to £10 0 0		11/8		
Phosphatic Manures.					
Superphosphate (16%S.P.A.)	£3 10 0 to £3 17 6			4/7¼	
Semsol (5%S.P.A. 15½%P.A.)	£3 0 0 to £3 10 0			4/2¼	
Basic Slag (18%P.A.)	£3 15 0 to £4 0 0			4/3¾	
Gafsa Mineral Phosphate (26% P.A.)	£2 10 0 to £3 8 4			2/3½	
Potash Manures.					
Kainit (14%P)	£3 0 0 to £4 5 0				5/2¼
Potash Salts (20%P)	£4 0 0 to £4 15 0				4/4½
Potash Salts (30%P)	£5 0 0 to £5 10 0				3/6
Muriate of Potash (50%P)	£7 10 0 to £10 0 0				3/6
Miscellaneous.					
Agricultural Salt	£1 5 0 to £3 10 0				

Abbreviations: N=Nitrogen. S.P.A.=Soluble Phosphoric Acid. P.A.=Phosphoric Acid. P=Potash.

The cost of the unit of fertilising ingredient is determined by dividing the price per ton by the percentage of the ingredient contained in the manure, and this method of determining values is the only sound basis on which two grades of a manure which supplies the same fertilising ingredient can be compared. The price per ton is not a reliable guide as to which is the better value for money. For example, in the table of prices it is seen that the average of the range of prices for 14% Kainit is £3 12s. 6d. per ton, and for 30% Potash Salts £5 5s. 0d. per ton, and it might be concluded that the Kainit was the better value for money. This is not so. The 30% Potash Salts contains more than twice as much Potash as the Kainit, and is, therefore, a cheaper source of potash when the price is even double that at which the Kainit is offered. The cost of a unit of Potash in the 30% Potash Salts is seen to be only 3/6, whereas the cost of a unit of Potash in Kainit is 5/2¼. At the prices ruling for these manures, 30% Potash Salts is, therefore, better value for money than Kainit. Similarly, it is seen that at the prices prevailing Gafsa Mineral Phosphate is a cheaper source of Phosphoric Acid than Basic Slag, and that Sulphate of Ammonia is the cheapest source of Nitrogen.

In connection with the costs of the units of Phosphoric Acid as shown in the table on page 64 it should be noted that in the case of Superphosphate, the cost is that of a unit of Soluble Phosphoric Acid, whereas in the cases of Basic Slag, Semsol and Gafsa Mineral Phosphate the figures represent the cost of a unit of insoluble Phosphoric Acid. It would not, therefore, be correct to compare the unit price of the phosphoric acid in Superphosphate with those of the phosphoric acid in the other three.

PRICES OF AGRICULTURAL SEEDS.

The following table shows the ranges of the retail cash prices of seeds at 1st March, 1936 :—

Corn (Seed) :		
Wheat (Irish grown)	per cwt.	7/6 to 8/–
,, (Imported)	,,	8/– to 14/–
Oats (Irish grown)	,,	6/– to 8/6
,, (Imported)	,,	8/– to 10/6
Barley (Irish grown)	,,	7/– to 9/–
Rye (Irish grown)	,,	5/- to 8/–
Root and Green Crops (Seed) :		
Turnips (Swede)	per lb.	1/– to 2/3
,, (Aberdeen)	,,	9d. to 1/6
Mangels	,,	9d. to 1/9
Carrots	,,	2/6 to 5/6
Clover Seeds :		
Red	,,	9d. to 1/–
White	,,	9d. to 1/–
Wild White (Kentish)	,,	3/– to 5/–
Alsike	,,	1/3 to 1/6
Flax Seed :	Per bag of	
Commercial varieties, viz., Dutch, Pernau and Riga	13 to 14 st.	48/- to 50/–
Pure Line (Blue Flowering) varieties	per cwt.	60/– to 75/–
White Flowering (concurrent)	,,	40/–
Grass Seed :		
Irish Perennial : 28 lbs to bushel	per bushel	5/6 to 7/6
26 ,,	,,	6/– to 6/6
Scots Perennial : 28 lbs. to bushel	,,	7/– to 8/3
Irish Italian : 22 lbs. to bushel	,,	5/– to 6/6
French Italian : 22 lbs to bushel	,,	6/– to 7/–
Cocksfoot	per lb.	4½d. to 9d.
Meadow Fescue	,,	5½d. to 1/–
Timothy	,,	5d. to 8d.
Potatoes :		
Arran Pilot	per cwt.	20/–
May Queen	,,	7/6 to 13/–
Sharps Express	,,	12/– to 13/–
Di Vernon	,,	7/6 to 12/–
British Queen	,,	4/– to 9/–
Majestic	,,	5/–
Arran Banner	,,	4/–
Arran Victory	,,	4/6 to 7/9
Kerr's Pink	,,	4/6 to 5/–
Up-to-Date	,,	4/6 to 5/–
Arran Cairn	,,	5/6 to 6/–

PRICES OF FAT STOCK.

The following are the average prices per live cwt. of bullocks and heifers, sold at Belfast Auction Marts during each of the four weeks ended 25th February, 1936 :—

Week ended.	Bullocks.	Heifers.
	s. d.	s. d.
4th February	33 9	34 0
11th February	33 9	34 6
18th February	34 0	34 9
25th February	33 3	33 6

PRICES OF LIVE STOCK

Average Prices of Live Stock at Fairs during the Month of February, 1936.

Date	Fair.	Calves (under 9 months.)	Store Cattle.	Fat Cattle (18 months and over).	Springers.		Milch Cows.	Fat Lambs (under 12 months old).	Fat Sheep (over 2 years old.)	Young Pigs.
					Cows.	Heifers.				
		Per Head	Per Cwt. Live wgt.	Per cwt. Live wgt.	Per head	Per head	Per head	Per head	Per head	Per head
		£ s.			£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
1	Strabane ..	4 0	28/6 to 29/–	31/6	– –	– –	12 0	– –	– –	– –
4	Omagh ..	4 10	28/– to 31/–	31/–	16 0	13 10	12 5	†1 10	†1 12	– –
5	Londonderry	– –	25/6 to 30/–	31/–	15 0	13 0	– –	– –	– –	1 2/6
5	Rathfriland	5 5	27/6 to 32/–	30/–	16 0	14 0	13 10	†1 10 *1 5	†1 10 *1 6	1 8
6	Ballymoney	5 5	28/6 to 30/3	30/–	14 10	12 15	– –	‡1 15 †1 7/6	‡2 0	1 7/6
7	Moy ..	– –	27/6 to 35/–	30/–	13 5	12 0	14 1/3	†1 12/6	– –	– –
8	Irvinestown	5 5	29/– to 31/6	29/–	15 0	– –	12 10	– –	– –	1 12/6
10	Enniskillen ..	4 5	26/– to 30/–	30/6	15 10	12 0	14 10	– –	– –	1 10
10	Limavady ..	– –	24/6 to 31/–	31/–	16 10	15 0	– –	– –	– –	1 5
11	Dungiven ..	– –	25/– to 31/–	30/–	17 0	– –	– –	– –	– –	1 2/6
12	Crossgar ..	– –	29/– to 31/–	—	17 0	– –	15 0	– –	– –	1 14
12	Kilrea ..	4 7/6	24/– to 31/6	29/–	15 10	11 10	13 10	– –	†2 2/6	1 7
14	Ballygawley	– –	28/– to 34/–	30/–	16 0	– –	14 0	– –	– –	1 12
15	Portadown	4 17/3	28/– to 32/6	31/–	16 0	14 0	17 0	– –	– –	1 15
17	Camlough ..	4 5	23/– to 29/–	31/–	14 10	14 0	13 5	– –	†1 12/6	– –
19	Lisnaskea ..	4 5/6	26/– to 31/6	31/6	14 0	14 0	12 15	– –	– –	1 9
20	Ballynahinch	– –	29/– to 31/–	—	16 10	– –	15 0	– –	†1 15	1 15
21	Moneymore	3 12/6	24/– to 30/–	31/–	15 0	10 17/6	10 5	– –	†2 2/6	1 7/6
22	Fintona ..	5 2/6	31/– to 33/–	32/–	15 15	14 0	14 0	†1 15	†1 12/6	1 7/6
27	Antrim ..	6 3	27/– to 31/–	30/–	20 0	17 0	– –	– –	– –	1 10
28	Castlederg ..	4 0	29/6 to 32/–	29/6	14 0	– –	– –	– –	†1 10	1 5
28	Killylea ..	– –	30/– to 35/–	30/–	15 0	– –	14 0	– –	– –	– –
29	Ballymena ..	5 6/3	21/6 to 33/6	—	17 5	17 15	15 15	– –	– –	1 14/6

* Mountain. † Downs and Cross. ‡Long Wools

IMPORTS AND EXPORTS.

Table showing the Imports and Exports through Northern Ireland ports of certain Agricultural Products during the month ended 31st January, 1936, with comparative figures for the corresponding period in 1935.

(*These figures are supplied through the courtesy of the Ministry of Commerce and are subject to revision.*)

Commodity.	IMPORTS.		EXPORTS.	
	Month ended 31st January, 1936.	1935.	Month ended 31st January, 1936.	1935.
Bacon .. .. .. cwt.	2,473	2,433	40,745	14,134
Hams .. .. .. „	586	660	14,905	14,966
Pork .. .. .. „	—	—	2,777	4,737
Butter .. .. „	17,509	15,057	234	202
Eggs Gt. hds.	9,091	8,735	111,491	166,771
Oat Products (including Oatmeal) .. .. cwt.	3,430	1,539	14,685	10,301
Potatoes .. .. tons	11	1	32,056	15,826
Poultry .. .. cwt.	67	46	56,136	52,426
Grass Seeds .. .. „	1,479	5,990	46,675	60,484

There were no imports of oats into Northern Ireland direct from abroad during the month of January, 1936, and the position as compared with the corresponding month of 1935, was therefore unchanged.

SHIPMENTS OF LIVE STOCK.

Statement showing the Shipments of Live Stock from Northern Ireland Ports during the following periods, months of February, 1936, January, 1936, February, 1935, two months ended 29th February, 1936, and 28th February, 1935:—

PORTS OF:—	CATTLE.						SHEEP.				PIGS.			
	Fat	Stores	Milch Cows	Springers	Calves	Total	Fat	Stores	Lambs	Total	Fat	Stores	Total	Horses.
Belfast	8,335	6,472	914	51	-	15,772	1,250	–	–	1,250	3,115	6	3,121	262
Larne	—	1,637	–	–	–	1,637	–	–	–	–	843	60	903	25
Londonderry ..	636	6,885	14	25	1,454	9,014	272	–	–	272	259	–	259	1
Newry	12	538	5	4	24	583	–	–	–	–	–	–	–	–
Total, Feb., 1936 ..	8,983	15,532	933	80	1,478	27,006	1,522	–	–	1,522	4,217	66	4,283	288
Total, Jan., 1936 ..	9,714	10,981	1,043	68	925	22,731	3,225	–	–	3,225	5,310	1	5,311	335
Total, Feb., 1935 ..	6,302	11,031	976	99	576	18,984	3,582	–	–	3,582	7,611	416	8,027	360
Total Two months ended 29th Feb., 1936	18,697	26,513	1,976	148	2,403	49,737	4,747	–	–	4,747	9,527	67	9,594	623
Total Two months ended 28th Feb., 1935	13,217	25,570	2,241	197	1,324	42,549	9,249	–	–	9,249	14,827	993	15,820	718

Table showing the numbers of Live Stock (1) exposed for sale and (2) sold at 20 fairs in Northern Ireland during the months of February, 1935 and January and February, 1936.

Description of Live Stock.	February, 1935.		January, 1936.		February, 1936.	
	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.
Store Cattle ..	6,133	4,209	5,999	4,274	7,766	5,587
Fat Cattle ..	1,753	1,415	1,919	1,792	2,020	1,881
Dairy Cattle ..	1,133	893	1,163	967	1,104	892
Sheep	334	260	201	192	254	185
Lambs	162	115	303	233	219	204
Young Pigs ..	2,646	2,294	2,924	2,189	3,291	2,648

Trade for store cattle at the principal fairs held during February continued to show an improvement. There were larger numbers on offer than during the previous month or the corresponding month of 1935, and with a greater demand than of late from across the Channel shipments of stores recorded an increase. Good, medium and large stores in condition, principally strong polly bullocks for fattening were in best demand, whilst small stores were in better demand for home grazing. Prices generally were again higher on the month. Fat cattle also experienced a good trade last month and the larger numbers on offer were fairly well cleared at prices which had a firmer tendency up till the close of the month when values weakened slightly.

Fat cows and bulls were in greater demand and sold readily at advanced prices. In the dairy cattle section supplies showed a slight decrease and most of the stock on offer were of a low standard of quality and hard to cash, whilst the relatively small number of first class cattle sold readily. Except for good quality stock, especially good young springing cows and heifers, trade was slow and prices were easier on the month. Sheep were in small numbers and mostly of inferior quality. Trade on the whole was fair at about late rates. Good quality fat lambs and sheep were in best demand to meet the requirements of local butchers. Large numbers of young pigs were in steady request and a large volume of business was done at late rates.

This report will be sent free monthly as issued on application being made to the Secretary, Ministry of Agriculture, Stormont, Belfast.

11th *March*, 1936.

G3106 Wt.1533/543 4,000 3/36 R.H.R. Gp.5.

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MINISTRY OF AGRICULTURE.

List of Leaflets and other Publications.

LEAFLETS.

No. 1. Flax Seed, 1936.
„ 2. Improvement of Farm Poultry.
„ 3. Feeding for Egg Production.
„ 4. Marketing of Eggs.
„ 5. The Dishorning of Calves.
„ 6. The Packing of Apples in Standard Boxes.
„ 7. Potato Trials.
„ 8. Seed Testing for Farmers.
„ 9. The Renovation of Orchards.
„ 10. Fruit Tree Pests—Capsid Bugs.
„ 11. Fruit Tree Pests—Aphides and Apple Sucker.
„ 12. Fruit Tree Pests—Caterpillars.
„ 13. Contagious Abortion in Cattle.
„ 14. Cheese-making on the Farm.
„ 15. Suitable Varieties of Fruit.
„ 16. The Feeding of Dairy Cows.
„ 17. Home Bottling of Fruits and Vegetables.
„ 18. Marketing of Dead Poultry.
„ 19. How to Feed Linseed.
„ 20. The Hatching and Rearing of Chickens.
„ 21. The Uses and Advantages of Portable Poultry Houses.
„ 22. Leather-Jacket Grubs.
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„ 82. White Scour in Calves.
„ 83. The Care, Management and Feeding of the Poultry Breeding Stock.

Any of the above leaflets may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

CIRCULARS.

No. 1. Phosphatic Fertilisers.
„ 5. Why Pay a Tax on the Horns of Cattle ?
„ 8. Basic Slag.
„ 9. Smut in Oats.
„ 10. Purchase of Fertilisers and Feeding Stuffs.
„ 11. Fertilisers and Feeding Stuffs Act—General Summary.
„ 12. The treatment of Liver Fluke.
„ 13. The Ox-Warble Fly.
„ 306. Fertilisers and Feeding Stuffs Act, 1926—Revision of Regulations.

MISCELLANEOUS PUBLICATIONS.

Store Cattle.
Reports on Egg-Laying Tests.
Crop Insurance.
List of Growers of Certified Crops of Immune Varieties of Potatoes.
List of Growers of Certified Crops of Non-Immune Varieties of Potatoes.
The Ministry's Monthly Report.
Register of Premium Stallions.
Guide to the Live Stock Breeding Act (Northern Ireland), 1922.
Guide to the Marketing of Fruit Act (Northern Ireland), 1932.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 80 Chichester Street, Belfast, at the prices stated :—

(1) The Annual Report of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
(2) Annual Report upon the Agricultural Statistics of Northern Ireland. Price 2/– net.
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(4) The Agricultural Output of Northern Ireland, 1925. Price 2/6 net.